

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

IN RE THE ALLSTATE CORPORATION
SECURITIES LITIGATION

Case No. 16-cv-10510

CLASS ACTION

DEMAND FOR JURY TRIAL

**EXPERT REPORT OF JOHN D. FINNERTY, Ph.D. IN SUPPORT
OF LEAD PLAINTIFF'S MOTION FOR CLASS CERTIFICATION**

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I. Qualifications

1. I am an Academic Affiliate at AlixPartners, LLP, a financial and operational consulting firm, where I was previously a Managing Director. I have extensive experience in securities valuation, derivatives valuation, solvency analysis, business valuation, damages calculations, and litigation support for matters involving securities fraud, breach of contract, commercial disputes, valuation disputes, solvency, fairness, and breach of fiduciary duty. I have testified as an expert in securities and other financial matters, broker hiring disputes, and valuation disputes, in federal and state court and in arbitration and mediation proceedings. I have also testified as an expert in bankruptcy court proceedings concerning the valuation of securities and businesses, the economics of debt-for-debt exchanges, and the fairness of proposed plans of reorganization.
2. Prior to joining AlixPartners, I was a Managing Principal at Finnerty Economic Consulting, LLC, which provided financial consulting and valuation services to law firms, corporations, industry associations, and government agencies. Prior to forming Finnerty Economic Consulting in 2003, I was a Managing Principal at Analysis Group, Inc., an economic consulting firm. Prior to joining Analysis Group, I was a Partner (non-audit) in the PricewaterhouseCoopers Financial Advisory Services Group. I have also held investment banking positions at Morgan Stanley, Lazard Frères, McFarland Dewey, and Houlihan Lokey Howard & Zukin. I previously served as a Director, Executive Vice President, Treasurer, and as Chief Financial Officer of College Savings Bank, an FDIC-insured and New Jersey-chartered thrift institution.
3. I am a Professor of Finance at Fordham University's Gabelli School of Business, where I was the founding Director of the school's Master of Science in Quantitative Finance Program. I

was awarded early tenure in 1991, and I received the Gladys and Henry Crown Award for Faculty Excellence in 1997. I have published 16 books, including Corporate Financial Management, 5th ed., Project Financing, 3rd ed., and Debt Management, and I have published more than 120 articles and professional papers concerning corporate finance, fixed income, and business and securities valuation. I co-hold four patents on financial products, including a life insurance product that paid off in units of a specially designed certificate of deposit that would pay the cost of the beneficiary's college education.

4. I have previously published a paper on the calculation of damages in securities fraud cases entitled, "An Improved Two-Trader Model for Measuring Damages in Securities Fraud Class Actions," which was published in the Spring 2003 issue of the Stanford Journal of Law, Business & Finance. I have also published a paper on the settlement amounts in securities fraud class actions, entitled, "Determinants of the Settlement Amount in Securities Fraud Class Action Litigation," which was published in the Summer 2006 issue of the Hastings Business Law Journal. I have extensive experience testing for market efficiency, performing loss causation analysis, and calculating damages in securities fraud cases. I have previously worked on 10b-5 securities fraud class action matters in which the defendant was an insurance company.
5. My teaching and research deal mainly with corporate finance, investment banking, fixed income securities valuation, fixed income portfolio management, and the design and valuation of complex securities. My corporate finance and investment banking courses cover business valuation, securities valuation, public offerings of securities, and equity financing. I was inducted into the Fixed Income Analysts Society Hall of Fame in 2011.
6. I previously served as the Chair of the Trustees, President, and Director, and I am currently

serving as a Trustee of the Eastern Finance Association, an academic finance organization. I am a former Director of the Financial Management Association. I have served as the President and Director of the Fixed Income Analysts Society, an association of finance professionals based in New York City. I am a former editor of *Financial Management*, one of the leading academic finance journals, and a former editor of *FMA Online*. I am a member of the editorial boards of the *Journal of Portfolio Management* and the *International Journal of Portfolio Analysis & Management* and a former associate editor of the *Journal of Applied Finance*.

7. I received a Ph.D. in Operations Research from the Naval Postgraduate School, an M.A. in Economics from Cambridge University, where I was a Marshall Scholar, and a B.A. in Mathematics from Williams College. Attached as Appendix A is a true and correct copy of my current resume, which lists all publications I have written or co-authored and includes a brief description of my trial and deposition testimony within at least the past four years.
8. I am being compensated at a rate of \$1,130 per hour for my work on this matter. I have been assisted in the preparation of this expert report by AlixPartners's staff working under my direction and supervision. I will also receive compensation based on the professional fees earned by AlixPartners in conjunction with their support of my work in writing this report. Neither my compensation nor AlixPartners's compensation is contingent on my findings or on the outcome of this matter.
9. The materials that I considered in coming to my opinions in this matter are referenced in this expert report and accompanying exhibits or are listed in Appendix B to this expert report.

II. Assignment

10. Labaton Sucharow LLP ("Counsel"), counsel for the Plaintiffs in this matter, has asked me to conduct appropriate studies and opine on the efficiency of the market for the common stock of

The Allstate Corporation (“Allstate” or the “Company”) during the period extending from October 29, 2014 through August 3, 2015 inclusive (the “Class Period”). Counsel has also asked me to explain the methodology for the calculation of the amount of the economic loss per share suffered by class members who purchased shares of Allstate’s common stock during the Class Period when the fraud-related inflation was removed from the Allstate’s stock price.

III. Summary of Opinions

11. Based on my education, knowledge, and training in economics; my experience in performing market efficiency in connection with securities class action matters; and my review of the case documents, company filings, and other information relevant to this matter, I have reached the following opinions to a reasonable degree of certainty in the financial economics profession after conducting appropriate studies, the results of which are described in this expert report:
 - a. The market for the shares of Allstate’s common stock was open, developed, and efficient during the Class Period; and
 - b. The price of Allstate’s common stock reacted to the information in a manner that is consistent with an efficient market on each of the alleged disclosure dates, and the decline in Allstate’s common stock price on each of the disclosure dates was statistically significant at the 5% level or better.

IV. Background

A. Overview of Allstate’s Business During the Class Period

12. The Allstate Corporation was incorporated on November 5, 1992 to serve as the holding company for Allstate Insurance Company.¹ It provides, primarily through Allstate Insurance Company, Allstate Life Insurance Company and other subsidiaries, property-liability

¹ Allstate Form 10-K for the fiscal year ending December 31, 2014, filed on February 19, 2015, at p. 1.

insurance, life insurance, and retirement and investment products in the United States and Canada. Shares of Allstate's common stock are traded under the ticker symbol ALL on the New York Stock Exchange ("NYSE").

13. In its 2014 SEC Form 10-K filing, Allstate stated that the Company was "the largest publicly held personal lines insurer in the United States."² It also highlighted that Allstate was the "2nd largest personal property and casualty insurer in the United States on the basis of 2013 statutory direct premiums earned" and the "16th largest issuer of life insurance business on the basis of 2013 ordinary life insurance in force," according to A.M. Best.³
14. Allstate has four business segments – Allstate Protection, Allstate Financial, Discontinued Lines and Coverages, and Corporate and Other. The Allstate Protection segment is the Company's core business line, which accounted for 93% of Allstate's consolidated insurance premiums and contract charges with \$29.61 billion in premiums written in 2014.⁴ In the Allstate Protection segment, Allstate sells auto, homeowners, and other property and casualty insurance products through agencies and directly through contact centers and the internet under the brand names Allstate®, Esurance® and Encompass®.
15. In its 2014 SEC Form 10-K filing, Allstate stated that it had focused on five operating priorities for 2014 and 2015 - growing insurance policies in force;⁵ maintaining the underlying combined ratio;⁶ proactively managing its investments to generate attractive risk-adjusted

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ Policies in force means policies that are active at a given point in time when payments are made on time or before the grace period expires.

⁶ "Combined ratio" measures an insurance company's profitability expressed as a ratio of total costs divided by total revenue. Specifically, the combined ratio is calculated as the sum of incurred losses and expenses divided by

returns; modernizing its operating model; and building long-term growth platforms.⁷

16. Insurance companies have underwriting guidelines that specify underwriting policies, such as the lines of insurance that are covered, the prohibited exposures, the amount of coverage for certain exposures, any prohibited geographic areas, and any other restrictions. Based on these underwriting guidelines, insurance companies determine whether to offer or decline to offer their products and also determine appropriate premiums to charge.
17. In its 2014 SEC Form 10-K filing, Allstate specified that, in the property and casualty business, it used “sophisticated pricing algorithms to more accurately price risks.”⁸ Allstate further noted that:

Sophisticated pricing and underwriting methods use a number of risk evaluation factors. For auto insurance, these factors can include but are not limited to vehicle make, model and year; driver age and marital status; territory; years licensed; loss history; years insured with prior carrier; prior liability limits; prior lapse in coverage; and insurance scoring utilizing certain credit report information. For property insurance, these factors can include but are not limited to amount of insurance purchased; geographic location of the property; loss history; age, condition and construction characteristics of the property; and insurance scoring utilizing certain credit report information.

18. According to the Complaint, Allstate started focusing on growth in early 2013 and subsequently relaxed its underwriting standards in 2013 in order to increase the number of policies in force.⁹

earned premiums. Incurred Losses refer to actual monies paid out in claims plus the change in “loss reserves.” Loss reserves are liabilities—these are claims that have occurred but have not been paid out yet by an insurer. “Underlying combined ratio” is calculated excluding catastrophe losses from the incurred losses. A combined ratio below 100 percent indicates that the company earns an underwriting profit.

⁷ Allstate Form 10-K for the fiscal year ending December 31, 2014, filed on February 19, 2015, p. 1.

⁸ *Id.*, p.3.

⁹ Complaint, ¶¶38-39.

B. Allegations

19. The Complaint identifies both material misrepresentations and material omissions attributable to Allstate. The distinction between the two is economically important. Both misrepresentations and omissions result in artificial stock price inflation: the misrepresentations (fraud by commission) trigger a price increase or mitigate an otherwise expected price decrease that would not occur but for the fraud, and the omission of material negative information (fraud by omission) avoids a price decrease that would occur but for the fraud. The repetition of a misrepresentation can also avoid a price decrease that would occur but for the fraud – in such instances, a repeated misrepresentation can act as an omission, i.e., the omission of the truth that the misrepresentation is and was false.
20. Plaintiffs allege that the Defendants made several misrepresentations and omissions during the Class Period primarily relating to Allstate’s auto insurance business. Specifically, Plaintiffs allege that Defendants experienced a steep increase in “auto claims frequency,” which represents the number of claims filed against an insurer’s auto insurance policies, from the second quarter of 2014 to the third quarter of 2014.¹⁰ However, Plaintiffs allege that Defendants failed to disclose this increase to the public until February 4, 2015, even though Defendants were aware of the claims frequency increase at least as of October 2014.¹¹ Plaintiffs also allege that Defendants made false and misleading statements concerning what was responsible for the significant increase in claims frequency.¹² Plaintiffs allege that Allstate launched a new strategy in 2013 to grow its “insurance policies in force” by relaxing

¹⁰ Complaint, ¶48.

¹¹ Complaint, ¶¶53, 70.

¹² Complaint, ¶2.

its underwriting standards.¹³ As a result of this new strategy, Plaintiffs allege that Allstate experienced an increase in the auto claims frequency in the third quarter of 2014 that continued through the third quarter of 2015.¹⁴

21. Plaintiffs allege that, during the Class Period, Defendants failed to disclose that Allstate's new strategy, *i.e.*, relaxing its underwriting standards, was the proximate cause of the significant increase in claims frequency that began in the third quarter of 2014.¹⁵ Allstate instead allegedly misrepresented to investors that the increasing claims frequency trend was consistent with its normal claims frequency trend in 2014.¹⁶ In early 2015, Allstate further misrepresented that the spike in the claims frequency was due to temporary external factors, such as the economy and the weather.¹⁷

V. Efficiency of the Market for Allstate's Common Stock

22. An efficient market is one in which "security prices fully reflect all available information."¹⁸ Stock price movements take place only after someone, on the basis of new information, is able to better assess the value of the asset.¹⁹ There are three versions of the Efficient Market

¹³ Complaint, ¶3.

¹⁴ Complaint, ¶4. Allstate allegedly experienced an initial increase in the auto claims frequency in the third quarter of 2014 when claims increased sharply from the second quarter of 2014.

¹⁵ Complaint, ¶7.

¹⁶ Complaint, ¶10.

¹⁷ Complaint, ¶¶12, 15.

¹⁸ Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 402.

¹⁹ Emery, Douglas R., John D. Finnerty, and John D. Stowe, Corporate Financial Management, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 452.

Hypothesis (“EMH”).²⁰ The weak form of the EMH states that stock prices reflect all information contained in past trading in the market. The semi-strong form of the EMH holds that stock prices reflect all publicly available information. This is the form of the EMH adopted by the Supreme Court in *Basic*.²¹ The strong form of the EMH states that stock prices reflect all public and private information. There is little evidence that the strong form of the EMH holds, and it would be surprising if insiders with possession of material non-public information could not earn abnormal trading profits.²²

23. The focus of my analysis is on the semi-strong form of the EMH, which is the most widely accepted characterization of what is meant by an “efficient market” in the securities industry and in academia. If a security’s price reflects all public information, an investor can rely on it as the market’s consensus of the security’s fair value. Judge Alfred J. Lechner, Jr., in *Cammer v. Bloom*,²³ cited commentators Bromberg and Lowenfels²⁴ (“Bromberg”) in defining certain key terms related to market efficiency in the context of a stock traded other than on the New York Stock Exchange where trading is subject to overall capitalization requirements and other indicia suggesting market efficiency:

²⁰ Fama, Eugene, “Efficient Capital Markets: A Review of Theory and Empirical Work,” *Journal of Finance*, 25, March 1970, pages 383-417.

²¹ *Basic Inc. v. Levinson*, 485 U.S. 224 (1988).

²² Jaffe, Jeffrey, “Special Information and Insider Trading,” *Journal of Business*, 47, July 1974, pages 410-428, and Lorie, James, and Victor Niederhoffer, “Predictive and Statistical Properties of Insider Trading,” *Journal of Law and Economics*, 11, April 1968, pages 91-103.

²³ *Cammer v. Bloom*, 711 F. Supp. 1264 (D.N.J. 1989). This decision is widely considered the definitive legal authority on the issue of the efficiency of the market for a company’s stock. See, e.g., *Teamsters Local 445 Freight Div. v. Bombardier*, 546 F. 3d 196, 204 n. 11(2d Cir. 2008); *Billhofer v. Flamel Technologies, S.A.*, 281 F.R.D. 150, 159 (S.D.N.Y. 2012) (Sweet J.) (applying the *Cammer* factors when assessing market efficiency); The Harvard Law School Forum on Corporate Governance and Financial Regulation, “Do Courts Count *Cammer* Factors,” August 23, 2012.

²⁴ *Id.* at 1276 (citing Bromberg and Lowenfels, 4 Securities Fraud and Commodities Fraud, § 8.6, August 1988).

- An open market is one in which anyone, or at least a large number of persons, can buy or sell.
- A developed market is one which has a relatively high level of activity and frequency, and for which trading information (e.g., price and volume) is widely available. It is principally a secondary market in outstanding securities. It usually, but not necessarily, has continuity and liquidity (the ability to absorb a reasonable amount of trading with relatively small price changes).
- An efficient market is one which rapidly and accurately reflects new information in the security's price.

These terms are cumulative in the sense that a developed market will almost always be an open one, and an efficient market will almost invariably be a developed one.²⁵

24. The *Cammer* court described five factors which should be considered in determining whether a market for a specific security is efficient:

- a. the stock's average weekly trading volume;
- b. the number of securities analysts who follow and report on the stock;
- c. the presence of market makers, institutional investors, and arbitrageurs;
- d. the company's eligibility to file a Form S-3 Registration Statement; and
- e. a cause-and-effect relationship, over time, between unexpected corporate events or financial news releases and an immediate response in stock price.²⁶

25. It is my opinion that the *Cammer* factors are consistent with the economics literature and that

²⁵ *Id.*

²⁶ *Cammer*, at 1286-1287.

they provide valuable insight into whether the market for a security is efficient.²⁷ *Cammer* Factor Five (a cause-and-effect relationship, over time, between unexpected corporate events or financial news releases and an immediate response in stock price) is especially important because it relates directly to the definition of an efficient market. I examine each of these factors for the market for Allstate's common stock during the Class Period.

26. In addition to the five *Cammer* factors, I also applied the three *Elmer Krogman* factors to examine further the efficiency of the market for Allstate's common stock during the Class Period.²⁸ These factors are: (i) the company's market capitalization; (ii) the stock's bid-ask spread; and (iii) the stock's public float. The *Elmer Krogman* tests, along with the *Cammer* factors, provide additional insight regarding the efficiency of the market for Allstate's common stock during the Class Period. The *Elmer Krogman* tests are also often cited as an additional set of factors that can be used to test for market efficiency.²⁹
27. Additionally, I analyzed whether put-call parity held for Allstate's stock and options throughout the Class Period and tested whether the price of Allstate's common stock followed a random walk during the Class Period. These tests can provide additional evidence of market efficiency, alongside the *Cammer* and *Elmer Krogman* tests, though no one test is, by itself, dispositive. Put-call parity is a mathematical relationship between the price of a company's common stock and the prices of its call and put options, which holds when all those instruments are accurately priced. Put-call parity should hold for Allstate's stock and options, at least to a close approximation, and the price movements of shares of Allstate's common

²⁷ Barber, Brad M., Paul A. Griffin, and Baruch Lev, "The Fraud-on-the-Market Theory and the Indicators of Common Stocks' Efficiency," *Journal of Corporation Law*, 19, Winter 1994, pages 285-312.

²⁸ *Krogman v. Sterritt*, 202 F.R.D. 467 (N.D. Tex. 2001).

²⁹ Cornell, Bradford and James C. Rutton, "Market Efficiency, Crashes, and Securities Litigation," *Tulane Law Review*, 81, December 2006, pages 443-471.

stock should generally follow a random walk if the market for Allstate's common stock is efficient. The random walk model suggests that, in an efficient market, stock price movements are independent and the returns on the stock are identically distributed over time.³⁰

28. The *Elmer Krogman* tests, the put-call parity tests, and the random walk tests, taken in conjunction with the *Cammer* factor tests, collectively facilitate a thorough assessment of whether the market for Allstate's common stock was efficient during the Class Period.

A. Application of the *Cammer* Factors to the Market for Allstate's Common Stock

i. *Cammer* Factor One: Weekly Trading Volume

29. High trading volume is indicative of an efficient market. As stated in *Cammer*:

The reason the existence of an actively traded market, as evidenced by a large weekly volume of stock trades, suggests there is an efficient market is because it implies significant investor interest in the company. Such interest, in turn, implies a likelihood that many investors are executing trades on the basis of newly available or disseminated corporate information.³¹

30. "Turnover measured by average weekly trading of 2% or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; 1% would justify a substantial presumption."³²
31. During the Class Period, shares of Allstate's common stock were listed on the NYSE. Exhibit 1 shows the daily price and trading volume of shares of Allstate's common stock during the Class Period and also during the one-year periods that precede and follow the Class Period. The average weekly reported trading volume for Allstate's common stock was approximately 11.9 million shares. (See Exhibit 2.) The average weekly trading volume of shares of

³⁰ Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 405.

³¹ *Cammer*, at 1286.

³² *Id.*, at 1293 citing Bromberg, et al.

Allstate's common stock was 2.89% of shares of Allstate's common stock outstanding, which provides a strong presumption of a liquid and efficient market for Allstate's common stock. In addition, the examination of weekly historical turnover ratios indicates that the volume of trading was large enough each week during the Class Period to support the conclusion that the market for Allstate's common stock was efficient during the Class Period.

32. The annualized turnover ratio is the annual reported trading volume divided by the number of shares outstanding. A total of over 455 million shares of Allstate's common stock traded during the Class Period, and there was, on average, 414 million shares of Allstate's common stock outstanding during the Class Period. (*See* Exhibit 2.) Since the Class Period spans approximately 0.76 years, the annualized turnover ratio was 143.85% for Allstate's common stock. (*See* Exhibit 2.) In comparison, the average annualized turnover ratio for NYSE-listed common stocks was 61.5% between October 2014 and August 2015.³³ (*See* Exhibit 3.) The high turnover ratios for Allstate's common stock, which greatly exceed the NYSE average, further justifies a strong presumption that the market for Allstate's common stock was efficient during the Class Period according to the Bromberg and Lowenfels criteria, as articulated by the *Cammer* court.

ii. *Cammer* Factor Two: Stock Analyst Coverage

33. Securities analysts play a critical role in promoting the efficiency of the securities markets. Analysts devote substantial amounts of time and resources to collecting and assessing information regarding the companies they follow. Their ability to provide sophisticated analysis and convey new information and their conclusions as to its implications for investors in the market for a stock improve the speed and accuracy with which market prices adjust to

³³ NYSEData.com Factbook.

reflect new information. Within twenty-four hours of a company's earnings release, many stock analysts in an efficient market will have disseminated in-depth research reports.

34. During the Class Period, at least 31 securities firms contributed securities analyst reports that covered Allstate. (*See* Exhibit 4.) Barclays Capital, Citi, Credit Suisse, Deutsche Bank, Evercore ISI, JPMorgan, Morgan Stanley, UBS, Wells Fargo, and William Blair & Company are some of the firms that had analysts who followed Allstate during the Class Period.
35. The regular availability of stock analyst research reports from leading broker-dealers, who covered Allstate during the Class Period, is evidence that the market for Allstate's common stock was efficient during the Class Period.
36. In addition, Allstate issued regular press releases during the Class Period, made regular securities filings with the Securities and Exchange Commission ("SEC"), and held regular analyst conference calls. Allstate also received regular press coverage throughout the Class Period, and information concerning Allstate was widely disseminated throughout the Class Period through national news services.

iii. Cammer Factor Three: Existence of Market Makers, Institutional Investors, and Arbitrageurs

37. Shares of Allstate's common stock were listed on the NYSE during the entire Class Period. During this period, numerous financial entities were actively buying and selling shares of Allstate's common stock. As disclosed in Schedule 13-F filings, between 77 percent and 80 percent of Allstate's common shares outstanding were held by institutional investors during the Class Period. (*See* Exhibit 5.) These institutions actively adjusted their holdings of shares of Allstate's common stock. The sum of the absolute values of the quarterly changes in securities held by each individual institutional shareholder ranged from approximately 45.6 million to

78.3 million shares of Allstate's common stock during the Class Period.

38. Schedule 13-F filings report the holdings of institutional investors on one day in each calendar quarter, and quarter-to-quarter changes in share holdings can significantly understate the total volume of trading by these institutional shareholders by failing to account for instances where institutional shareholders bought and sold shares during the respective quarters. Thus, my estimation of the volume of institutional trading in shares of Allstate's common stock is conservative. High levels of institutional ownership and the active trading by these holders are further evidence that is consistent with the market for Allstate's common stock being efficient during the Class Period. Institutional investors are sophisticated market participants who closely track their investments and contribute readily to the quick dissemination of information into a security's price, which facilitates price discovery by other investors.
39. There is evidence that numerous financial entities were actively buying and trading shares of Allstate's common stock during the Class Period. According to Bloomberg, there were 13 active market makers for shares of Allstate's common stock between October 2014 and August 2015 with trading volumes for Allstate's common stock in excess of one million shares.³⁴ (See Exhibit 6.) The large number of market makers facilitating trading in shares of Allstate's common stock during the Class Period is indicative of a liquid and efficient market for Allstate's common stock during this period. Greater liquidity lessens the likelihood of arbitrage opportunities and facilitates investors' price discovery.

iv. Cammer Factor Four: Allstate's Eligibility to File SEC Form S-3

40. The Securities Act of 1933 requires companies to file registration statements prior to the sale

³⁴ Per Bloomberg L.P. Bloomberg's list of market makers includes 172 entities, although some reported very low trading volumes.

of securities to the public. Form S-3 is a simplified registration form that allows incorporation by reference of Securities Exchange Act of 1934 (the “Exchange Act”) reports for companies based in the United States only.³⁵ Form S-3 is available to large, seasoned companies.

However, I note that an amendment to the eligibility requirements for Form S-3, which was effective January 28, 2008, now allows for smaller companies to file on Form S-3.³⁶

41. The primary requirements for S-3 eligibility are that the issuer must have filed all materials required under the Exchange Act for at least twelve months and that the public float of the company’s common equity must be \$75 million or greater. As stated in the SEC release establishing the requirements for S-3 eligibility, “This form is predicated on the Commission’s belief that the market operates efficiently for these companies, i.e., that the disclosure in Exchange Act reports and other communications by the registrant, such as press releases, has already been disseminated and accounted for by the market place.”³⁷
42. Allstate was eligible to file on Form S-3 throughout the Class Period because shares of Allstate’s common stock were listed on the NYSE during the entire Class Period.

v. *Cammer* Factor Five: The Relationship between News Events and Security Price Changes

43. In evaluating market efficiency, perhaps the most reliable test of market efficiency comes from *Cammer* Factor Five, the relationship between news events and securities price changes, because it ties directly to the definition of an efficient market. An efficient market will react

³⁵ <http://www.sec.gov/about/forms/forms-3.pdf>.

³⁶ Securities and Exchange Commission, “Revisions to the Eligibility Requirements for Primary Securities Offerings on Forms S-3 and F-3,” Release No. 33-8878; File No. S7-10-07, December 2007.

³⁷ *Cammer*, at 1284-1285 citing SEC Securities Act Release No. 6331, 46 Red. Reg. 41,902, reprinted in Fed. Sec. L. Rep. (CCH) Spec. Regs. No. 926, extra ed. (Aug. 13, 1981).

quickly to new information that is economically significant. I examined the responsiveness of Allstate's common share price to material news events to test whether the market for Allstate's common stock was efficient during the Class Period. I performed an event study for shares of Allstate's common stock to investigate the relationship between changes in Allstate's stock price and news events concerning Allstate.

44. An event study is a standard statistical technique that financial economists use to determine whether a security's price reaction to a news announcement (or some other event) is statistically significant. It is consequently the standard analytical technique that financial economists use to assess the stock market's responsiveness to new information when testing for market efficiency. The new information is the 'event', and generally, the one-day change in the issuing company's common stock price the day the information is released into the market (or the next trading day if the information is disclosed publicly while the market is closed) indicates the stock market's assessment of the information's significance. The stock market's reaction is consistent with market efficiency when the actual reaction to the new information conforms to the reaction one would expect on the basis of economic theory.
45. The event study analyzes the daily total return on shares of Allstate's common stock. The total daily return is the daily percentage change in the price of a share, adjusted for any dividend distributions. In order to focus on the impact of the company-specific news on the price of a security, one calculates a security's abnormal return around the time of the announcement. A security's abnormal return is the difference between the security's actual return and its expected return. A security's expected return is the return one would expect based on general market price movements and industry-related factors that are unrelated to the specific event that is being examined, as reflected in the changes in the prices of stocks of firms in the same

industry. Once one has calculated a security's abnormal returns, one can use standard statistical tests to determine whether these abnormal returns are statistically significant.

46. I calculated the expected returns on shares of Allstate's common stock by applying the widely accepted Fama-French Three-Factor Model.³⁸ Eugene Fama and Kenneth French developed what is now known as the Fama-French Three-Factor Model in 1993.³⁹ The Fama-French Three-Factor Model expresses the excess return on a common stock on day t (R_t) over the return on Treasury bills that day (R_F) in terms of three key factors. The return on Treasury bills represents the return one would expect on a risk-free investment. This model "has become widely known and adapted."⁴⁰ The model identifies the following three factors that explain excess stock returns:

- $(R_m - R_F)$ – the excess return on the equity market portfolio (R_m) over the return on Treasury bills (R_F);⁴¹
- *SMB* ("small minus big") – the difference between the returns on small-capitalization stocks and the returns on large-capitalization stocks; and
- *HML* ("high minus low") – the difference between the returns on high book-to-market stocks (commonly known as value stocks) and the returns on low book-to-market stocks (commonly known as growth stocks).

47. The regression formula for the Fama-French Three-Factor Model, which is fitted to daily data,

³⁸ Fama, Eugene F., and Kenneth R. French, "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics*, 33, 1993, pages 3-56.

³⁹ *Id.*

⁴⁰ Emery, Douglas R., John D. Finnerty, and John D. Stowe, Corporate Financial Management, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 191.

⁴¹ The equity market portfolio return, R_m , represents the value-weighted return on all NYSE, AMEX and NASDAQ stocks.

is:

$$R_t - R_F = \alpha + \beta(R_m - R_F) + s(SMB) + h(HML) + \epsilon \quad (\text{Equation 1})$$

48. The variables $R_m - R_F$, SMB , and HML are defined above. The coefficients β , s , and h measure the contributions of the respective factors to the excess return on the stock, $R_t - R_F$. A positive coefficient suggests a direct relationship between the factor and the return on the analyzed stock. The larger the coefficient, the more responsive the stock's return will be to that factor on any given day. The Fama-French Three-Factor Model has become widely accepted for event study analysis.⁴² It is a significant improvement over the (unadjusted) Capital Asset Pricing Model ("CAPM") because it prices the risks associated with small firm size and financial distress.⁴³
49. Morningstar's *Cost of Capital Yearbook*, which has been widely relied upon for historical rate of return data in the investment management industry, uses the Fama-French Three-Factor Model, among other models, to calculate the cost of equity capital for firms in various industries.⁴⁴ The Morningstar *Cost of Capital Yearbook* was discontinued after 2013 and replaced by the Duff & Phelps *Valuation Handbook*, which also employs the Fama-French Three-Factor Model, among other models, to calculate the cost of capital.⁴⁵
50. Controlling for industry factors that can affect the price of a company's stock is appropriate in

⁴² See, for example, Boehme, Rodney D., and Sorin M. Sorescu, "The Long-run Performance Following Dividend Initiations and Resumptions: Underreaction or Product of Chance," *Journal of Finance*, 57, 2002, pages 871-900, and Ang, James S., and Shaojun Zhang, "An Evaluation of Testing Procedures for Long Horizon Event Studies," *Review of Quantitative Finance and Accounting*, 23, 2004, pages 251-274. Eugene Fama also won the Nobel Prize in Economics in 2013. "Eugene F. Fama – Facts," Nobelprize.org. Nobel Media AB 2014. Available at http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/fama-facts.html.

⁴³ Emery, Douglas R., John D. Finnerty, and John D. Stowe, *Corporate Financial Management*, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 192.

⁴⁴ Morningstar, *Cost of Capital 2013 Yearbook*, 2013, page 12.

⁴⁵ Duff & Phelps, *2014 Valuation Handbook*, Industry Cost of Capital, page 6.

an event study, as several articles in the academic and professional literature have previously noted.⁴⁶ Indeed, academic research has pointed out the importance of making sure that estimates of returns to investors on securities are free of the bias that can occur with the omission of an explanatory factor when using a market model, such as the CAPM or the Fama-French Three-Factor Model, to conduct an empirical study.⁴⁷

51. A multiple regression model is estimated using an estimation period that is ideally untainted by fraud and comparable to the event period (i.e., the Class Period).⁴⁸ However, in this instance, the Fama-French Three-Factor Model provides a better fit to Allstate's common stock price behavior during the Class Period than it does to the behavior of Allstate's common stock price in the year prior to the Class Period as reflected in the higher adjusted R-squared statistic and

⁴⁶ Tabak, David I., and Frederick C. Dunbar, "Materiality and Magnitude: Event Studies in the Courtroom," in Roman L. Weil, Michael J. Wagner, and Peter B. Frank, eds., Litigation Services Handbook, 3rd ed., Wiley, New York, 2001, chapter 19. See also Alexander, Janet C., "The Value of Bad News," *UCLA Law Review*, 41, August, 1994, pages 1421-69; Macey, Jonathan R., Geoffrey P. Miller, Mark L. Mitchell, and Jeffry M. Netter, "Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson," *77 Virginia Law Review Association*, 1017, August 1991, pages 1021-28; MacKinlay, A. Craig, "Event Studies in Economics and Finance," *Journal of Economic Literature*, 35, March 1997, pages 13-39; Mitchell, Mark L., and Jeffry M. Netter, "The Role of Financial Economics in Securities Fraud Cases: Applications at the Securities and Exchange Commission," *The Business Lawyer*, 49, February 1994, pages 545-90; and Cornell, Bradford, and R. Gregory Morgan, "Using Finance Theory to Measure Damages in Fraud on the Market Cases," *UCLA Law Review*, 37, June 1990, pages 883-923.

⁴⁷ Bartholdy, Jan, and Paula Peare, "Unbiased Estimation of Expected Return Using CAPM," *International Review of Financial Analysis*, 2003, pages 69-81. The article specifically mentions the CAPM but its analysis applies equally to the Fama-French Three-Factor Model because that model is really just an extended version of the CAPM. See Brealey, Richard A., Stewart C. Myers, and Franklin Allen, Principles of Corporate Finance, 9th ed., McGraw-Hill, New York, 2008, pages 225-227. Mark M. Carhart also constructed a four-factor model, which takes the Fama-French three-factor model and extends it by adding a momentum factor. The momentum factor is calculated as the equal-weighted average of firms with the highest 30 percent eleven-month return lagged one month less the equal-weighted average of firms with the lowest 30 percent eleven-month return lagged one month. See Mark M. Carhart, "On Persistence in Mutual Fund Performance," *Journal of Finance*, 52, March 1997, pages 57-82 and Fama, Eugene F. and Kenneth R. French, "Size, value, and momentum in international stock returns," *Journal of Financial Economics*, 105, 2012, pages 457-472.

⁴⁸ For event studies, there are four choices for the estimation period, (1) before the event period, (2) during the event period, (3) after the event period, or (4) around the event period. See Glenn V. Henderson, Jr., "Problems and Solutions in Conducting Event Studies," *The Journal of Risk and Insurance*, 57, 1990, pages 282-306.

higher F-statistic when the statistical goodness of fit of the two models are compared.⁴⁹

Accordingly, it is my opinion that it is appropriate to use the Class Period as the estimation period because the Fama-French Three-Factor Model achieves a better statistical fit for the purpose of estimating Allstate's abnormal returns during the Class Period. A better statistical fit leads to a more robust model, which provides more reliable estimates of Allstate's abnormal returns.

52. When using the event period to fit the model, it is also necessary to isolate the effects of any alleged fraud on the security's price prior to calculating the security's abnormal returns. One manner of estimating abnormal returns during the Class Period is to augment the regression model to include dummy variables for the event dates to control for the effect of fraud-related events on the parameter estimation.⁵⁰ Another procedure that is similar is to drop the events dates during the estimation period, which is the method I selected.⁵¹
53. I reviewed the Complaint in this matter and compiled a list of news events related to the alleged fraud during the Class Period, including any allegedly false and misleading statements, material omissions, and disclosures. Exhibit 8 provides a comprehensive list of the fraud-related news event dates alleged in the Complaint. I dropped all these fraud-related news event dates in the estimation period I used to fit the Fama-French Three-Factor Model in order to avoid having the returns on these dates bias the parameter estimates in my regression model.

⁴⁹ I note that the volatility of Allstate's common stock for the one year after the Class Period was higher than the volatility during the Class Period and thus would be unsuitable to use for the estimation period. *See* Exhibit 7.

⁵⁰ A study by Binder describes an approach that parameterizes the abnormal returns in the regression model by including a set of dummy variables. Each dummy variable takes on the value one for a particular event, and the coefficient of the dummy variable measures the abnormal return associated with the event. *See* John J. Binder, "The Event Study Methodology Since 1969," *Review of Quantitative Finance and Accounting*, 11, 1998, pages 111-137. *See also* John J. Binder, "Measuring the Effects of Regulation with Stock Price Data," *RAND Journal of Economics*, 16, 1985, pages 167-183, and Glenn V. Henderson, Jr., "Problems and Solutions in Conducting Event Studies," *Journal of Risk and Insurance*, 57, 1990, pages 282-306.

⁵¹ I note that the estimated regression coefficients would be identical under both methods.

54. I modified the Fama-French Three-Factor Model to include the returns on an industry index of common stocks that are comparable to Allstate to take into account the sensitivity of Allstate's common stock price to movements in the comparable companies' common stock prices during the Class Period. The regression formula for my Modified Fama-French Three-Factor Model is:

$$R_t - R_F = \alpha + \beta(R_m - R_F) + s(SMB) + h(HML) + i(Industry\ Index) + \epsilon \quad (Equation\ 2)$$

55. *Industry Index* represents the return on a market-weighted custom index comprised of members of the Standard & Poor's 500 Property and Casualty Insurance Index ("S5PROP Index"), excluding Allstate.⁵² The coefficient *i* measures the contribution of industry-wide factors, as measured by the daily percentage change in the *Industry Index*, to the daily excess returns on Allstate's common stock.
56. I applied the Modified Fama-French Three-Factor Model for every day in the Class Period to test whether the stock market's reactions to Allstate's daily news events were statistically significant during the Class Period. (See Exhibits 9 and 10.) In each case, I used a two-tailed test of statistical significance to test whether the daily abnormal return on Allstate's common stock is zero (the null hypothesis) against the alternative hypothesis that the daily abnormal return is different from zero (the alternative hypothesis).⁵³
57. I report the results of the statistical testing for all dates during the Class Period in Exhibit 10. I distinguish when the abnormal stock return is significantly different from zero at the 1%

⁵² The members include The Progressive Corporation, The Travelers Companies, Inc., The Chubb Corporation, Cincinnati Financial Corporation, XL Group Ltd, and Chubb Limited (formerly ACE Limited).

⁵³ The two-tailed test is conservative because I would normally expect that a corrective disclosure would elicit a negative stock market reaction, in which case the alternative hypothesis is that the abnormal stock market return is less than zero and a one-tailed test would seem more appropriate. Thus, the two-tailed test with a 10% critical significance level is equivalent to a one-tailed test with a more conservative 5% critical significance level.

significance level (highly statistically significant), 5% level (statistically significant), or 10% level (weakly statistically significant), which is also consistent with the general practice within the field of financial economics. (*See* Exhibit 11.) Academic articles in the financial economics literature typically identify results that are statistically significant at all three levels of statistical significance but place the most weight on statistical results that are significant at the 1% level, less weight on those that are significant at the 5% level, and the least weight on those that are only significant at the 10% level.

58. In order to identify news events relevant to Allstate during the Class Period, I examined the three disclosure/misrepresentation dates identified in the Complaint and one additional misrepresentation date on which Allstate released earnings.⁵⁴ Earnings announcements typically include many of the most important company news items. I examined the cause-and-effect relationship between these news events and the responsiveness of Allstate's common stock price by testing the abnormal returns on each news announcement date for statistical significance.
59. I reviewed the information released on the four dates and found that the stock price reacted in a manner that is consistent with an efficient market on all four dates. For all earnings release dates I reviewed, the information released was economically significant to investors and securities analysts, and Allstate's stock price reactions are also statistically significant at the 10% level or better and in the direction one would expect in an efficient market.

⁵⁴ Allstate released its earnings results on four dates during the Class Period: (1) October 29, 2014, (2) February 4, 2015, (3) May 5, 2015, and (4) August 3, 2015. As all earnings results were released after the market closed on each of the four dates, I have examined the market reactions of Allstate's common stock on the following trading dates.

Date	Event	Actual Return	Abnormal Return	p-value	Sig
10/30/2014	Earnings Release for Q3 2014	1.48%	0.97%	0.068	*
2/5/2015	Earnings Release for Q4 2014	-0.39%	-1.34%	0.012	**
5/6/2015	Earnings Release for Q1 2015	-3.84%	-3.58%	0.000	***
8/4/2015	Earnings Release for Q2 2015	-10.15%	-10.02%	0.000	***

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

60. I present a detailed review of all four event days in Appendix C to this report.

B. Application of the *Elmer Krogman* Factors to the Market for Allstate's Common Stock

61. In addition to the five *Cammer* factors, I also applied the three *Elmer Krogman* factors to examine further the efficiency of the market for Allstate's common stock during the Class Period.

i. Company's Market Capitalization

62. During the Class Period, the quarterly average market capitalization of Allstate's common stock ranged from approximately \$23.3 billion to approximately \$29.6 billion. (See Exhibit 12.)

63. The NYSE is the world's largest and most liquid stock exchange. Its infrastructure and participants allow it to provide a reliable, liquid, and efficient market place. Its stringent listing standards insure that issuers are large enough to facilitate a liquid market, and its regulations insure that material company information is disclosed promptly to investors. In general, to be listed on the NYSE, the market value of public held equity must exceed \$50 million.⁵⁵

64. Shares of Allstate's common stock were traded on the NYSE throughout the entire Class

⁵⁵ NYSE Listed Company Manual, http://nysemanual.nyse.com/LCMTTools/PlatformViewer.asp?selectednode=chp_1_9_2_1&manual=%2Fflcm%2Fsections%2Fflcm-sections%2F.

Period. As Bromberg and Lowenfels stated:

[A]t a minimum, there should be a presumption – probably conditional for class determination – that certain markets are developed and efficient for virtually all securities traded there: the New York and American Stock Exchanges, the Chicago Board Options Exchange and the Nasdaq National Market System.⁵⁶

The listing of the shares of Allstate's common stock on the NYSE is consistent with the market for Allstate's common stock being efficient during the Class Period.

65. During the Class Period, the market capitalization of Allstate's common stock on average was approximately 540 times as large as the \$50 million minimum for NYSE listing. The median market capitalization for all stocks traded on the NYSE ranged from \$1.7 billion to \$2.1 billion, during the Class Period.⁵⁷ The very large market capitalization of Allstate's common stock in relation to the average market capitalization of NYSE stocks is consistent with the market for Allstate's common stock being efficient during the Class Period.

ii. Stock's Bid-Ask Spread

66. A stock's bid-ask spread provides an indication of the efficiency of the market for the stock. An efficient market is open and developed. An open market is one in which anyone, or at least a large number of persons, can buy or sell. A developed market is one which has a relatively high level of activity and trading frequency, and for which price and volume information is widely available. It usually has the ability to absorb a reasonable amount of trading with relatively small price changes. The wide availability of information about the stock and the high level of trading, which promote market efficiency, will lead market makers in the stock to set relatively small bid-ask spreads. Consequently, observing a small bid-ask spread for a

⁵⁶ *Cammer*, at 1292, citing Bromberg & Lowenfels.

⁵⁷ Based on data provided by the Center for Research in Security Prices (CRSP), as of each calendar quarter from December 31, 2014 to September 31, 2015.

stock would be consistent with the market for the stock being efficient.

67. During the Class Period, the average and median daily bid-ask spreads for Allstate's common stock were 0.02% and 0.01%, respectively. (*See* Exhibit 13.) For the Class Period, the average and median daily bid-ask spreads for all ordinary common shares traded on the NYSE were 0.13%, and 0.05%, respectively.⁵⁸ The average and median bid-ask spreads for Allstate's common stock were below the average and median for all NYSE common stocks in the Class Period, respectively, which is evidence that supports market efficiency.

iii. Stock's Public Float

68. During the Class Period, the percentage public float of Allstate's common stock, calculated as the number of shares outstanding less the number of shares held by insiders divided by the number of shares outstanding, was approximately 99.7%. (*See* Exhibit 12.) The market value of Allstate's public float averaged \$27 billion during the Class Period.
69. The large size of the public float for Allstate's common stock suggests a liquid market for the security. As noted, an efficient market is open and developed. A developed market is one which has a relatively high level of activity and trading frequency, and therefore usually has the ability to absorb a reasonable amount of trading with relatively small price changes, which is the hallmark of a liquid market. Consequently, the large public float for Allstate's common stock during the Class Period is consistent with the hypothesis that the market for Allstate's common stock was a liquid, efficient market during the Class Period.

C. Additional Factors Considered

70. In addition to the *Cammer* factors and the *Elmer Krogman* factors discussed in the previous sections of this report, I also performed two sets of additional tests for market efficiency that

⁵⁸ Based on data provided by CRSP.

are described in the economics literature. These tests can provide valuable insights into whether the market for a security is efficient.⁵⁹ The additional tests I conducted are (a) testing whether the “put-call parity” relationship between the price of Allstate’s common share and the prices of the call options and put options written on Allstate’s common shares was satisfied during the Class Period and (b) performing “random walk” tests.

i. Put-Call Parity Tests

71. *Put-call parity* expresses a relationship between the prices of a company’s put and call options and the price of its common stock. Put-call parity should hold in an efficient capital market.⁶⁰ Testing whether put-call parity holds can assist in assessing whether the market for a company’s common stock and the market for options on its common stock are efficient. Put-

⁵⁹ This literature includes Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, “Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets,” *Journal of Financial Economics*, 74, 2004, pages 305-342; Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, “Failure is an Option: Impediments to Short Selling and Option Prices,” *Review of Financial Studies*, 22, 2009, pages 1955-1980; Battalio, Robert, and Paul Schultz, “Options and the Bubble,” *Journal of Finance*, 2006, pages 2071-2102; Fama, Eugene, “The Behavior of Stock Prices,” *Journal of Business*, 38, 1965, pages 34-105; Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, *Modern Portfolio Theory and Investment Analysis*, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003; Fama, Eugene F. and Kenneth R. French, “Permanent and Temporary Components of Stock Prices,” *Journal of Political Economy*, 96, 1988, pages 246-273; Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, “Nonparametric Testing for Time Series: A Bibliography,” *Canadian Journal of Statistics*, 10, 1982, pages 1-38; Mittsdoerffer, R., and J. Diederich, “Prediction of First Day Returns of Initial Public Offering in the US Stock Market Using Rule Extraction from Support Vector Machines,” *Studies in Computational Intelligence (SCI)*, 80, 2008, pages 185-203; Luger, Richard, “Exact Nonparametric Tests for a Random Walk With Unknown Drift Under Conditional Heteroscedasticity,” Research Department, Bank of Canada, pages 2-3; Campbell, B., and Jean-Marie Dufour, “Exact Nonparametric Orthogonality and Random Walk Tests,” *Review of Economics and Statistics*, 77, February 1995, pages 1-16; Boehmer, Ekkehart and Eric K. Kelley, “Institutional Investors and the Informational Efficiency of Prices,” *Review of Financial Studies*, 22, 2009, pages 3563-3594; Boehmer, Ekkehart, Charles M. Jones, and Xiaoyan Zhang, “Which Shorts Are Informed?,” *Journal of Finance*, 63, April 2008, pages 491-527; Boehmer, Ekkehart and Juan Wu, “Short Selling and the Price Discovery Process,” *Journal of Financial Studies*, 26, 2013, pages 287-322; Klemkosky, Robert C. and Bruce G. Resnick, “Put-Call Parity and Market Efficiency,” *Journal of Finance*, 34, December 1979, pages 1141-1155; Bris, Arturo, William N. Goetzmann, and Ning Zhu, “Efficiency and the Bear: Short Sales and the Markets Around the World,” *Journal of Finance*, 62, June 2007, pages 1029-1079; and Elyasiani, Elyas, Shmuel Hauser, and Beni Lauterbach, “Market Response to Liquidity Improvements: Evidence from Exchange Listings,” *Financial Review*, 41, 2000, pages 1-14.

⁶⁰ Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, “Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets,” *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, “Failure is an Option: Impediments to Short Selling and Option Prices,” *Review of Financial Studies*, 22, 2009, pages 1955-1980.

call parity tests are joint tests of the efficiency of the markets for the stock and for the options written on the stock.

72. A holder of an equity call option has the right to purchase the underlying stock at a specified strike price, or exercise price. A holder of an equity put option has the right to sell the underlying stock at a specified exercise price. If put-call parity holds, then the price of a put option (“ P ”) with a particular strike price and expiration date will equal the price of a call option (“ C ”) with the same strike price and expiration date minus the price of the underlying stock (“ S_0 ”) plus the present value of the exercise price (“ $PV(X)$ ”) plus the present value of the dividends on the underlying common stock expected to be paid during the remaining duration of the options (“ $PV(dividend)$ ”). This relationship expressed in equation form is:

$$P = C - S_0 + PV(X) + PV(Dividend) \quad (Equation 3)$$

73. In this equation, the put and call options must have the same exercise price and the same expiration date. Rearranging this equation to express the share price produces the following equation:

$$S_0 = C - P + PV(X) + PV(Dividend) \quad (Equation 4)$$

74. If this relationship does not hold,⁶¹ which is commonly referred to as a *put-call parity violation*, arbitrageurs should be able to earn riskless profits by buying the relatively cheap assets and selling the relatively expensive ones. Such arbitrage opportunities generally do not occur (except possibly for very short time periods) in an efficient market. Academics have argued that in certain situations, short sale restrictions have limited the ability of arbitrageurs

⁶¹ The relationship embodied in Equation 4 is referred to as put-call parity. When put-call parity holds, the price of the firm’s common stock, which is on the left-hand side of the equal sign in Equation 4, equals the sum of the variables on the right-hand side of the equal sign, which means that the combination of items produces exactly the same value as the share of common stock.

to take advantage of the mispricing of assets.⁶² In particular, it has been argued that if investors are limited in their ability to sell the stock short, there will be a tendency for the share price on the left-hand side of Equation 4 to be greater than the sum of the elements on the right-hand side, in which case the stock will be overpriced and a riskless arbitrage opportunity will exist.

75. First, I investigated whether there is any evidence that might indicate whether short-sale constraints might have impeded an efficient market for Allstate's common stock during the Class Period.⁶³ For NYSE stocks, the average short interest as a percentage of shares outstanding was approximately 3.4% during the Class Period.⁶⁴ (See Exhibit 14.) The average short interest in shares of Allstate's common stock as a percentage of shares of Allstate's common stock outstanding during the Class Period was approximately 1.4%, which is well below the NYSE average. (See Exhibit 14.)
76. While Allstate's average short interest was well below the NYSE average, the put-call parity test results will indicate whether any short-sale effects were strong enough to induce significant violations of put-call parity in the market for Allstate's common stock during the Class Period. The put-call parity tests, which I perform next, test whether shares of Allstate's common stock traded at prices above where they would be expected to trade in a market with enough short selling to achieve and maintain put-call parity.
77. Using option pricing data obtained from the OptionMetrics database and Allstate's common

⁶² Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

⁶³ Battalio, Robert, and Paul Schultz, "Options and the Bubble," *Journal of Finance*, 61, 2006, pages 2071-2102.

⁶⁴ The short interest for the NYSE is based on the short interest for all NYSE index members as reported by Bloomberg L.P.

stock pricing data obtained from Bloomberg L.P., I investigated whether put-call parity held for Allstate's common stock during the Class Period.⁶⁵ When put-call parity holds, the share price satisfies the equilibrium relationship stated in Equation 4, and it may be concluded that short selling is not being restricted. I matched calls and puts based on their exercise prices and expiration dates. I took the average of the best last bid and best last ask quotes to estimate the prices of the calls and puts. For the price of a share of Allstate's common stock, I used the last traded price for that security. Dividends were set equal to the expected dividends to be received during the life of the option.⁶⁶ The dividends and the exercise price was discounted using interpolated yields on risk-free securities obtained from Bloomberg L.P. To improve the quality of the data, I deleted options with fewer than six calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than \$0.375.⁶⁷

78. After applying these filters, I was left with 2,521 pairs and a total of 157,336 put option and call option contracts. I calculated the put-call parity violation for each of these pairs using the following equation:

$$\text{Put-Call Parity Violation} = \frac{[S_0 - C + P - PV(X) - PV(\text{Dividend})]}{S_0} \quad (\text{Equation 5})$$

Exhibit 15 show the results of the put-call parity violation test for Allstate's common stock on a monthly basis between October 2014 and August 2015.

79. Although the OptionMetrics database can be considered one of the best publicly available

⁶⁵ Option market makers generally change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of options contracts traded each day. Bid and ask quotes come from the NBBO (National Best Bid and Offer) data.

⁶⁶ For purposes of my calculations, I set the expected dividends to be equal to the actual dividends received during the life of the option.

⁶⁷ These filters were applied in Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, page 1960.

databases for options pricing data, some researchers have found that the option prices from the database have the potential to exaggerate the frequency of put-call parity violations.⁶⁸ Even after considering the potential for a higher frequency of put-call parity violations from the pricing data, I found that the average put-call parity violation for Allstate's common stock and options during the Class Period was only -0.15%. (See Exhibit 15.) The average Allstate put-call parity violation is well below what is found in published academic research. The authors of "Failure is an Option: Impediments to Short Selling and Option Prices" found that the average put-call parity violation for 4.5 million pairs traded during 1998 and 1999 was 0.36% and that the standard deviation was 1.79%.⁶⁹ Thus, the range between minus one standard deviation and plus one standard deviation extends from -1.43% to 2.15%. None of the average monthly put-call parity violations for Allstate's common stock during the Class Period falls outside this range.

80. Additionally, the authors of "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets" analyzed 80,614 option pairs between July 1999 and November 2001.⁷⁰ They measured put-call parity violations by calculating the ratio $R = 100 \ln(S/S^*)$, where S is the stock price and S^* is the price predicted by put and call option prices. The average R for their sample was 0.30. The average R for the Allstate common stock pairs is -0.15. (See Exhibit 16.) The interquartile range for this ratio (25th percentile to the 75th percentile) in the aforementioned study extends from -0.16 to 0.65.⁷¹ The average R of -0.15 for Allstate's

⁶⁸ Battalio, Robert, and Paul Schultz, "Options and the Bubble," *Journal of Finance*, 61, 2006, page 2086.

⁶⁹ Evans, Richard B., Christopher C. Geczy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

⁷⁰ Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342.

⁷¹ *Id.*, page 316.

common stock is within this range.

81. The test results reported in Exhibits 15 and 16 show that the put-call parity relationship held for Allstate's common stock for the Class Period. I have seen no evidence that short sales or any other restrictions may have impaired the market efficiency of Allstate's common stock during the Class Period.
82. I also examined the average absolute value of put-call parity violations, which was 0.22% for the "Failure is an Option" method and 0.22 for the "R" method for Allstate's common stock. (See Exhibits 15 and 16.) These values are also well within the respective ranges in the aforementioned studies, and thus, these results are consistent with the market for Allstate's common stock and the market for call options and put options on Allstate's common stock being efficient during the Class Period.
83. I also examined put-call parity for those options that were trading "near the money."⁷² These options had exercise prices near the price per share of Allstate's common stock. The test results for this sub-sample are consistent with the test results for the overall sample. The average put-call parity violation was -0.12% for the "Failure is an Option" method, which is well within the respective ranges in the aforementioned studies, and the average put-call parity violation was -0.12 for the "R" method, which is also well within the respective ranges. (See Exhibits 15 and 16.) These test results are consistent with market efficiency for Allstate's common stock during the Class Period.
84. The fact that the put-call parity relationship held closely during the Class Period suggests that Allstate's common stock price fairly reflected its intrinsic value, based on the publicly

⁷² The sample was restricted to those pairs for which $-0.1 < \ln(S_0/\text{Exercise Price}) < 0.1$. This filter is discussed in Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, page 340.

available information about Allstate, as would be expected in an efficient market.⁷³ This is further evidence that the market for Allstate's common stock was efficient during the Class Period.

ii. Random Walk Tests

85. Common stock returns follow what is known as a random walk in an efficient market.⁷⁴ Stock prices in an efficient market bounce around from moment to moment much like bubbles in a glass of soft drink; that is, when stock returns follow a random walk, stock price movements are independent from moment to moment. Accordingly, the returns on the stock each day are identically distributed. The pattern of stock prices is stable in the sense that the expected return and volatility do not change over time. Consequently, the company's share price does not change in a predictable manner from one moment to the next, and investors cannot use past stock price movements to predict the next day's stock price movement.⁷⁵
86. I performed two types of tests, parametric tests and non-parametric tests, to examine whether the random walk hypothesis could be rejected for Allstate's common stock during the Class Period. If share prices follow a random walk, stock price movements are independent from one day to the next; there is no serial correlation evident in the stock's daily returns. Testing the random walk hypothesis involves testing a stock's returns for serial correlation by investigating whether there is any evidence that stock price movements one day are systematically related to (i.e., correlated with) stock price movements on one or more

⁷³ Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

⁷⁴ Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, pages 34-105.

⁷⁵ Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 405.

subsequent days in a discernible pattern. If there is no evidence of serial correlation, then the random walk hypothesis cannot be rejected for the particular stock and the time period tested. Likewise, the hypothesis that the stock trades in an efficient market also cannot be rejected, at least for the period tested.

87. Parametric tests examine whether there is any serial correlation evident in day-to-day stock returns.⁷⁶ Parametric tests make certain assumptions about the stock returns that are inconsistent with actual stock returns. For example, the conventional regression test makes the assumption that the errors around the fitted regression line are normally distributed. The normal probability distribution allows for outcomes between negative and positive infinity.⁷⁷ However, stock returns are bounded below by returns of -100%, since stock prices cannot fall below zero. Consequently, the basic assumption underlying the conventional regression test does not strictly fit the data, even though it is usually a reasonable approximation. On the other hand, non-parametric tests are distribution-free and thus may be considered more appropriate when performing random walk tests to examine market efficiency.⁷⁸ In an abundance of caution, I ran both types of tests.

a. Non-Parametric Tests

88. I ran two non-parametric statistical sign tests, the *McNemar Test* and the *Wilcoxon Signed-rank Test*, to investigate whether the returns on Allstate's common share prices followed a random

⁷⁶ Fama, Eugene F. and Kenneth R. French, "Permanent and Temporary Components of Stock Prices," *Journal of Political Economy*, 96, 1988, pages 246-273. When serial correlation is present, day-to-day stock price movements are not independent, but instead, are systematically related in some manner.

⁷⁷ There is an extensive academic literature that furnishes evidence that stock returns are not normally distributed. One of the most often cited papers in this literature is Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, pages 34-105.

⁷⁸ One drawback of the non-parametric tests I performed is that the tests can only detect 1-day lag serial correlation. Therefore, I also performed parametric tests to confirm the results of the non-parametric tests and to test for the existence of serial correlation lags of up to five days.

walk during the Class Period. There is an extensive financial literature on the use of non-parametric sign tests to examine evidence of a random walk in stock returns.⁷⁹ As I have noted, in an efficient market, the stock price follows a random walk. Consequently, the returns on successive days are independent of one another, and the probability of an increase in price and the probability of a decrease in price should be equal and independent of past returns.

However, as pointed out by Professor Eugene Fama in his seminal paper on the behavior of stock prices:

Now in fact we can probably never hope to find a time series [of stock prices] that is characterized by *perfect* independence. Thus, strictly speaking, the random walk theory cannot be a completely accurate description of reality. For practical purposes, however, we may be willing to accept the independence assumption of the model as long as the dependence in the series of successive price changes is not above some 'minimum acceptable' level.⁸⁰

89. The *McNemar Test* is used to determine whether there is an equal probability between two events: (a) a positive return today is followed by a negative return tomorrow and (b) a negative return today is followed by a positive return tomorrow.⁸¹ In an efficient market where stock prices exhibit a random walk, the probabilities of both events happening should be equal. As shown in Panel A of Exhibit 17, during the Class Period, there are 55 observations where a positive stock price return one day is followed by a negative return the next day and 55 observations where a negative return one day is followed by a positive return the next day. In this case, there appears to be an equal probability of a positive return followed by a negative

⁷⁹ For a survey of this literature, see Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, "Nonparametric Testing for Time Series: A Bibliography," *Canadian Journal of Statistics*, 10, 1982, pages 1-38.

⁸⁰ Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, page 35.

⁸¹ Mittsдорffer, R., and J. Diederich, "Prediction of First-Day Returns of Initial Public Offering in the US Stock Market Using Rule Extraction from Support Vector Machines," *Studies in Computational Intelligence (SCI)*, 80, 2008, pages 185–203; and Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, "Nonparametric Testing for Time Series: A Bibliography," *Canadian Journal of Statistics*, 10, 1982, pages 1–38.

return and a negative return followed by a positive return. The *McNemar Test* statistic is 0.0091 with a p-value of 0.9240 for Allstate's common stock during the Class Period. The p-value is not statistically significant. Therefore, the null hypothesis that the probabilities of a positive (negative) return one day followed by a negative (positive) return the next day are equal cannot be rejected. Simply, an investor cannot profit on one day solely by knowing the return of Allstate's common stock the previous day.

90. The second non-parametric random walk test I performed is the *Wilcoxon Signed-rank Test*.⁸² It examines whether there is an equal probability that a positive (negative) return one day is followed by a negative (positive) return the next day. This test is different from the *McNemar Test* because it accounts for both the direction and the magnitude of the return changes. The median difference between consecutive daily returns should be zero in a random-walk time series. As shown in Panel B of Exhibit 17, during the Class Period, the *Wilcoxon Signed-rank Test* t-statistic is 0.1758, and the p-value is 0.8604, which is again far from statistical significance, when I test Allstate's common stock. Therefore, the null hypothesis that the median difference in consecutive daily returns is zero cannot be rejected.
91. The results of the non-parametric tests of the random walk hypothesis are consistent with a random walk time series for the prices of Allstate's common stock during the Class Period. Both sets of test results support the hypothesis that Allstate's common stock traded in an efficient market during the Class Period.

b. Parametric Tests

92. The time series of Allstate's common stock returns should not exhibit any serial correlation in

⁸² Luger, Richard, "Exact Non-Parametric Tests for a Random Walk With Unknown Drift Under Conditional Heteroscedasticity," Research Department, Bank of Canada, pages 2–3; and Campbell, B., and Jean-Marie Dufour, "Exact Nonparametric Orthogonality and Random Walk Tests," *Review of Economics and Statistics*, 77, February 1995, pages 1–16.

an efficient market, whether it is serial correlation with a one-day lag (which the non-parametric tests are designed to detect) or lags longer than one day (which I investigate using a parametric test). In addition to the two non-parametric tests I just described, I also ran two sets of parametric tests, regression tests for serial correlation between the returns and prior day returns on Allstate's common stock and the *Portmanteau Test (Q-Test)*, to examine further whether there is any serial correlation evident in Allstate's common stock returns during the Class Period. For each set of tests, I examined both the raw returns and the excess returns estimated from the event study model I discussed previously.

93. In performing the serial-correlation tests, I first regressed Allstate's common stock raw returns on the prior day raw returns. Next, I regressed Allstate's common stock excess returns on the prior day excess returns. The p-values of both tests for the raw returns and the excess returns are not statistically significant at the 10% level. Therefore, the tests did not indicate the presence of any statistically significant serial correlation for either the raw returns or the excess returns during the Class Period. (*See* Exhibit 18, Panel A.)
94. The test results are consistent with an efficient market for Allstate's common stock during the Class Period; both test results (based on raw returns and excess returns) indicate that the pattern of returns for Allstate's common stock is consistent with a random walk during the Class Period.
95. In addition, I performed the *Portmanteau Test (Q-Test)*, which examines whether there is any serial correlation between Allstate's common stock returns and the prior daily returns with lags between one day and five days. Using both Allstate's common stock raw returns and excess returns, I found that the p-values in the tests are not statistically significant at the 10% level for each of the one-day to five-day lags during the Class Period. (*See* Exhibit 18, Panel B.) Thus,

these test results do not support the hypothesis of serial correlation between returns with lags of five or fewer days.

96. In sum, based on the results of the non-parametric and parametric tests taken collectively, it is my opinion that there is no statistically significant serial correlation evident in Allstate's common stock returns during the Class Period. None of the tests conducted has produced evidence of significant serial correlation that would contradict market efficiency for Allstate's common stock. Therefore, it is my opinion that the hypothesis that Allstate's common stock returns followed a random walk during the Class Period, which would be indicative of an efficient market, cannot be rejected.

VI. Methodology for the Calculation of Economic Loss per Share

97. Counsel has also asked me to explain the methodology for the calculation of the amount of the economic loss per share suffered by class members who purchased shares of Allstate's common stock during the Class Period when the fraud-related inflation was removed from the stock price. Assuming Plaintiffs prove liability, I will calculate the economic loss per share in the following manner:
- a. The abnormal return on Allstate's common stock is calculated for each of the disclosure dates, using the regression analysis methodology described in this report, so as to exclude the impact of market-wide and industry-wide factors that are unrelated to the fraud.
 - b. Then, a loss causation analysis is performed to examine whether any other non-fraud-related factors could reasonably have been expected to account for any portion of the abnormal return on any of the disclosure dates. For each disclosure date, the effects of any company-specific factors that are unrelated to the alleged fraud are subtracted

- from the abnormal return. Accordingly, the abnormal return net of all the market-wide, industry-wide, and company-specific effects unrelated to the alleged fraud represents the amount of damages per share attributable to the disclosure of the alleged fraud on the particular disclosure date.
- c. The dollar amount of the inflation in Allstate's common stock price that is directly attributable to the alleged fraud on each of the disclosure dates is calculated based on the "net" abnormal return on Allstate's common stock. The "net" abnormal return is converted to dollars per share by multiplying the percentage "net" abnormal return on the corrective disclosure date by Allstate's closing stock price on the immediately preceding trading day.
 - d. The amount of fraud-related inflation in Allstate's stock price on a particular day during the Class Period equals the difference between the actual share price and the price of the stock but for the fraud. The but-for price is the price with all the effects of the fraud removed. The calculation assumes that the amount of the inflation per share is a constant dollar amount within each of the relevant time intervals during the Class Period.
 - e. The amount of the economic loss per share a shareholder experienced due to the alleged fraud depends on the date the shareholder purchased the Allstate shares and the date these shares were sold. When there are multiple disclosure dates, the amount of economic loss for a share purchased on a particular day during the Class Period is calculated as the sum of the inflation amounts per share attributable to all subsequent disclosures of the alleged fraud that occur prior to the sale of the shares.
 - f. I also apply the 90-day "look-back" provision of the Private Securities Litigation

Reform Act of 1995 (the “PSLRA”),⁸³ which caps the amount of per-share damages when a firm’s stock price rebounds within 90 days following the end of the Class Period. When shares are sold within 90 days of the final corrective disclosure date, the PSLRA damages cap equals the difference between the price paid for the shares and the average price during the period that begins on the final corrective disclosure date and ends on the date of sale. When the shares are sold 90 days or more beyond the final corrective disclosure date, the cap equals the difference between the price paid and the average price during the 90 days following the final corrective disclosure date.

98. Every class member’s economic loss per share can be directly calculated utilizing the same methodology discussed herein, which is therefore common to all class members. This class-wide damages model is in accordance with widely used and generally accepted methodologies and statutes.

VII. Conclusions Regarding the Efficiency of the Market for Allstate’s Common Stock During the Class Period

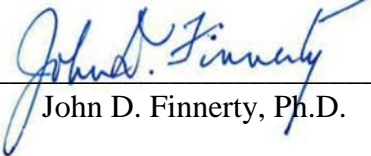
99. It is my opinion, based on the results of the tests described in the preceding paragraphs, that the market for Allstate’s common stock was open, developed, and efficient during the Class Period.
100. This opinion is based on the security’s high volume of trading, the large number of securities analysts following Allstate coupled with a regular flow of company-specific information, the presence of a large number of market makers, the substantial number of the securities held and traded by institutional investors, Allstate’s eligibility to file registration statements on Form S-

⁸³ Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 202 Stat. 737 (1995).

3, the demonstrable cause-and-effect relationship between the release of Allstate-specific news and the prompt price reactions of Allstate's stock, Allstate's large market capitalization and large public float, the fact that the securities traded on the highly liquid NYSE throughout the entire Class Period with reasonably sized bid-ask spreads, the evidence that Allstate's share price satisfied put-call parity, which indicates the stable relationship between the prices of Allstate's common stock and the prices of call options and put options on Allstate's common stock, and evidence that Allstate's common stock returns followed a random walk during during the Class Period. All analyses I performed overwhelmingly support the hypothesis that the market for Allstate's common stock was open, developed, and efficient during the Class Period.

101. My analysis is based on the materials I have reviewed to date. I reserve the right to amend my opinion and file a supplemental report in this matter should I obtain any other significant information that leads me to change any of the opinions expressed in this report. To the extent this matter is adjourned for any reason, I further reserve the right to supplement this report.

Executed: June 22, 2018



John D. Finnerty, Ph.D.



Appendix A

JOHN D. FINNERTY, Ph.D.

Academic Affiliate, AlixPartners, LLP

Professor of Finance, Gabelli School of Business, Fordham University

Phone: (212) 845-4090

Fax: (646) 746-2490

Cell: (347) 882-8756

909 Third Avenue

New York, NY 10022

Email: jfinnerty@alixpartners.com

Dr. Finnerty recently transitioned to an Academic Affiliate in the Financial Advisory Services Group at AlixPartners, LLP, where he had previously served as a Managing Director for four years. He specializes in market manipulation cases, securities class actions, business valuation, securities valuation, derivatives valuation, solvency analysis, corporate finance, PIPE financing, calculation of damages, statistical analysis, and litigation support for matters involving valuation disputes, securities fraud, solvency, fairness, breach of contract, breach of fiduciary duty, broker raiding, commercial disputes, and employment disputes involving the valuation of employee stock options. He has testified as an expert in valuation, broker raiding, and securities and other financial matters in federal and state court and in arbitration and mediation proceedings. He has also testified as an expert in bankruptcy court concerning the valuation of businesses and securities, debt-for-debt exchange offers, and the fairness of proposed plans of reorganization.

Dr. Finnerty is also a Professor of Finance at Fordham University's Gabelli School of Business where he was the founding Director of the Master of Science in Quantitative Finance Program. He has taught for more than 30 years, including courses in corporate finance, investment banking, fixed income analysis, fixed income securities, fixed income portfolio management, principles of finance, securities innovation, and bankruptcy and reorganization. His teaching and research interests include hedge fund and private equity fund management, structure, and performance. He has developed innovative models for valuing convertible securities, employee stock options, restricted common stock, inflation-indexed bonds, venture capital preferred stock, emerging-growth firm common stock, and private equity carried interests.

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Dr. Finnerty has published 16 books, including *Corporate Financial Management*, 5th ed., *Project Financing: Asset-Based Financial Engineering*, 3rd ed., *Principles of Financial Management*, and *Debt Management*, and more than 120 articles and professional papers in corporate finance, business and securities valuation, and other areas of finance. His writings and teaching have focused on the analysis and valuation of securities, especially fixed income instruments and complex derivative products, and mortgage-backed and other asset-backed securities. Dr. Finnerty is a former editor of *Financial Management*, one of the leading academic finance journals, and a former editor of *FMA Online*. He is a member of the editorial advisory boards of the *Journal of Portfolio Management* and the *International Journal of Portfolio Analysis & Management* and a former associate editor of the *Journal of Applied Finance*.

Dr. Finnerty worked for more than 20 years as an investment banker. He worked on more than 50 public and private financings, and served as financial advisor in connection with several mergers and several project financings.

Dr. Finnerty is a Trustee and a former Chair of the Trustees and a former President and Director of the Eastern Finance Association, a former Director of the Financial Management Association, and a former President and Director of the Fixed Income Analysts Society. He served as a member of FASB's Option Valuation Group in connection with the revision of FAS 123. He was inducted into the *Fixed Income Analysts Society Hall of Fame* in 2011.

EDUCATION

1977	Ph.D. in Operations Research, Naval Postgraduate School
1973	B.A. and M.A. in Economics, Cambridge University; Marshall Scholar
1971	A.B. in Mathematics, Williams College; magna cum laude with highest honors in Mathematics; Rice Prize in Mathematics; Phi Beta Kappa

BUSINESS EXPERIENCE

2013 – Present	AlixPartners, LLP, New York, NY
2017 – Present	Academic Affiliate, Financial Advisory Services Group
2013 – 2017	Managing Director, Financial Advisory Services Group
2003 – 2013	Finnerty Economic Consulting, LLC, New York, NY
	Managing Principal

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2001 - 2003	Analysis Group, Inc., New York, NY Managing Principal
1997 - 2001	PricewaterhouseCoopers, LLP, New York, NY Partner, Financial Advisory Services Group Dispute Analysis & Investigations securities litigation practice
1995 - 1997	Houlihan Lokey Howard & Zukin, New York, NY Director
1989 - 1995	McFarland Dewey & Co., New York, NY General Partner
1986 - 1989	College Savings Bank, Princeton, NJ Executive Vice President, Chief Financial Officer, Treasurer, Secretary, and Director
1982 - 1986	Lazard Frères & Company, New York, NY Vice President, Corporate Finance Department
1977 - 1982	Morgan Stanley & Co. Inc., New York, NY Associate, Corporate Finance Department

ACADEMIC EXPERIENCE

1987 - Present	Fordham University Gabelli School of Business, New York, NY Professor of Finance and founding Director of the Master of Science in Quantitative Finance Program. Received tenure in September 1991. Gladys and Henry Crown Award for Faculty Excellence, 1997.
1976 - 1977	Naval Postgraduate School, Monterey, CA Adjunct Professor, Department of Administrative Sciences
1973 - 1976	United States Naval Reserve Instructor, Naval Postgraduate School. Promoted to Lieutenant, USNR.

PROFESSIONAL ASSOCIATIONS

Chair of the Trustees, Eastern Finance Association (2009-2010), Trustee (2008-Present), President (2007-2008), and Director (2005-2008)

President, Fixed Income Analysts Society (2006-2007), and Director (2001-2009)

Director, Financial Management Association (1991-1999, 2005-2007, 2011-2013)

Editor, *Financial Management* (1993-1999)

Editor, *FMA Online* (2001-2010)

Associate Editor, *Journal of Derivatives Accounting* (2003-2005)

Associate Editor, *Journal of Applied Finance* (2000-2007, 2012-2016)

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Associate Editor, *Journal of Financial Engineering* (1992-1999)

Member, Editorial Advisory Boards, *The Financier* (1995-2003), *Journal of Portfolio Management* (1995-Present), and *International Journal of Portfolio Analysis & Management* (2011-Present)

Globe Business Publishing Ltd., London, U.K., Globe Law and Business Reader Panel (2015-Present)

OTHER ACTIVITIES

Leadership Giving Co-Chair, Williams College Class of 1971

Co-chairman, New Jersey Special Gifts Program, Williams College Third Century Campaign

Member, Special Gifts Committee, New York City Area for Williams College Third Century Campaign

Vice Chairman, Williams College Class of 1971 25th Reunion Gift Committee

Treasurer and Trustee, Spring Lake Bath and Tennis Club, and Co-Chair, Finance Committee

AWARDS

Marshall Scholar, 1971

Gladys and Henry Crown Award for Faculty Excellence, Fordham Business School, 1997

Best Investments Paper, Southern Finance Association, 2001

Best Corporate Finance Paper, Southern Finance Association, 2006

Bene Merenti Medal, Fordham University, 2007

Fixed Income Analysts Society Hall of Fame, 2011

Achievements in Excellence Team Award, AlixPartners, LLP, 2014

Ashley Greater New York Community Service Award, 2018

Appendix A

EXPERT TESTIMONY IN LAST FOUR YEARS

<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Kramer Levin Naftalis & Frankel Residential Capital Official Committee of Unsecured Creditors	In re: Residential Capital, LLC, et al., Debtors Residential Capital, LLC, et al. v. UMB Bank Official Committee of Unsecured Creditors v. UMB Bank U.S. Bankruptcy Court for the Southern District of New York Case No. 12-12020 (MG)	Prepared an expert report and a rebuttal expert report describing OID (original issue discount) bonds, explaining the discount as interest, calculating the amount of OID, describing incentives firms can give bondholders to exchange their bonds for new bonds when OID is created, and analyzing a debt-for-debt exchange offer Residential Capital conducted in 2008. Testified at deposition and at trial in bankruptcy court.
Internal Revenue Service	Sugarloaf Fund, LLC v. Commissioner of Internal Revenue United States Tax Court Chicago, IL Docket No. 671-10	Prepared an expert report concerning the market for distressed consumer receivables in Brazil and valuing three portfolios of distressed Brazilian consumer electronics receivables. Testified at trial in tax court.
Olshan Frome Wolosky	Iroquois Master Fund, Ltd. v. Quantum Fuel Systems Technologies Worldwide, Inc. U.S. District Court for the Southern District of New York Case No. 13 Civ. 3860	Prepared an expert report concerning the fair market value of an exchange right embedded in a corporate common stock warrant issued in a public offering and the impact of the warrant issue on the effective common stock price in a previously issued common stock warrant. Testified at deposition and at trial.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	CMFG Life Insurance Company, et al. v. RBS Securities U.S. District Court for the Western District of Wisconsin Case No. 12-cv-00037 WMC	Prepared an expert report concerning the amount due to CMFG Life Insurance Company, CUMIS Insurance Society, and MEMBERS Life Insurance Company on their equitable rescission claim as a result of their purchase of residential mortgage-backed securities from RBS Securities. Testified at deposition.
Faegre Baker Daniels Sherman & Howard	The Pioneer Centres Holding Company Employee Stock Ownership Plan and Trust, et al. v. Alerus Financial and Berenbaum Weinshienk U.S. District Court for the District of Colorado Civil Action No. 1:12-cv-02547-RM-BNB	Prepared an expert report analyzing and comparing a proposed ESOP stock purchase and redemption transaction and a consummated asset purchase transaction, analyzing an independent transaction trustee's negotiating position with respect to the seller's representations and warranties, and assessing the plaintiffs' damages claims. Testified at deposition.
Quinn Emanuel Urquhart & Sullivan	In re Lehman Brothers Holdings, et al., v. JPMorgan Chase Bank U.S. Bankruptcy Court for the Southern District of New York Index No. 10-ap-03266	Prepared an expert report and a rebuttal expert report concerning the incremental value Lehman Brothers could have been realized from the sale of its investment management division if the bankruptcy of Lehman Brothers could have been delayed at least five business days. Testified at deposition.

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<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Ashurst Markit Group Limited	European Commission Statement of Objections of 1 July 2013 Case COMP/39.745 – CDS Information Market	Prepared an expert report and a supplemental expert report explaining why the CDS market was not ready for exchange trading by 2009, CDS dealers were unlikely to have had sufficient incentives to become the initial market makers, and a CDS CLOB exchange was unlikely to achieve lower trading costs and wider new investor demand.
Internal Revenue Service	AD Investment 2000 Fund LLC AD Global 2000 Fund LLC v. Commissioner of Internal Revenue United States Tax Court New York, NY Docket Nos. 9177-08 and 9178-08	Prepared an expert report concerning the reasonableness of profit expectation for a strategy involving a spread call option strategy. Testified at trial in tax court.
Luboj & Thau	Charles Schwab v. Morgan Stanley Smith Barney FINRA-DR Arbitration Arbitration No. 12-02325	Prepared an expert report concerning the damages resulting from the alleged raid of two California offices of Charles Schwab. Testified at arbitration.
Satterlee Stephens Burke & Burke	Oppenheimer & Co. Inc. v. Deutsche Bank Securities Inc. FINRA Arbitration FINRA Case No. 10-04093	Prepared an expert report and testified at arbitration concerning auction rate credit-linked notes, their intended market, the fair market of the AR CLNs at issuance, and Deutsche Bank's unjust enrichment.
Wollmuth Maher & Deutsch	Lehman Brothers Special Financing, Inc. v. Bank of America, et al. U.S. Bankruptcy Court for the Southern District of New York Case No. 10-03547 (SCC)	Prepared an expert report concerning the economic commonality of certain payment preference provisions across 48 CDO transactions in which Lehman Brothers Special Financing was involved as a credit default swap counterparty. Testified at deposition.
Robbins Geller Rudman & Dowd	Carpenters Pension Trust Fund of St. Louis, et al. v. Barclays plc, et al. U.S. District Court for the Southern District of New York Civil Action No. 1:12-cv-05329- SAS	Prepared an expert report on the efficiency of the market for the American depositary shares (ADS) on the Company's common stock in connection with a securities class action. Testified at deposition and at trial.
Fox Rothschild	In re: 1H 1, Inc., et al., Debtors George L. Miller, Chapter 7 Trustee v. Kirkland & Ellis U.S. Bankruptcy Court for the District of Delaware Case No. 12-50713 (PJW)	Prepared an expert solvency report concerning an aluminum extrusion company. Testified at deposition.
Labaton Sucharow Robbins Geller Rudman & Dowd	In re Goldman Sachs Group, Inc. Securities Litigation U.S. District Court for the Southern District of New York Case No. 1:10-cv-03461-PAC	Prepared an expert report on the efficiency of the market for the Company's common stock in connection with a securities class action. Testified at deposition.

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<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Internal Revenue Service	Endeavor Partners Fund, LLC, Delta Currency Trading, LLC, Tax Matters Partner, et al. v. Commissioner of Internal Revenue United States Tax Court New York, NY Docket Nos. 8698-12, 8710-12, 8721-12, 8846-12, 9975-12, 11290-12, and 12591-12	Prepared an expert rebuttal report responding to an expert report prepared by the taxpayer's expert, which provided an economic rationale underlying the taxpayer's business strategy. Testified at trial in tax court.
Boies, Schiller & Flexner Korein Tillery	Bruce S. Sherman v. Bear Stearns Companies Inc., et al. U.S. District Court for the Southern District of New York Index No. 09 Civ. 8161 (RWS)	Prepared an expert report in connection with a 10b-5 securities fraud matter concerning the efficiency of the market for the common stock of the Bear Stearns Companies, Inc., furnishing a loss causation analysis, and calculating the amount of damages sustained by Bruce Sherman due to the alleged fraud. Testified at deposition.
Arnold & Porter	AmTrust North America, Inc. v. SquareTrade, Inc. JAMS Arbitration No. 1100079447	Prepared an expert report concerning the improper sampling of consumer electronics claims submitted under the defendant's extended service plans and the incorrect calculation of damages by the plaintiff's experts. Testified at arbitration.
Humphrey, Farrington & McClain Klamann Law Firm White Graham Buckley & Carr	Dennis Demetre and Lori Lewis v. HMS Holdings Corp. Supreme Court of the State of New York, County of New York Index No. 652381/2012	Prepared an expert report identifying the expected synergies from a corporate merger; explaining due diligence, role of investment bankers, post-merger integration, and purpose of earn-outs in change-of-control transactions; analyzing the earn-out provision of a stock purchase agreement; and calculating the amount of damages sustained by the plaintiffs due to non-payment of the earn-out. Testified at deposition and at trial.
Schuyler, Roche & Crisham	UBS Financial Services Inc. v. David Kinnear, et al. FINRA Arbitration FINRA Case No. 12-00554	Prepared an expert report concerning the damages allegedly resulting from the improper solicitation of former clients by a broker in violation of his employment agreement. Testified at arbitration.
Securities and Exchange Commission	U.S. Securities and Exchange Commission v. Stifel, Nicolaus & Co., Inc. and David W. Noack U.S. District Court for the Eastern District of Wisconsin Case No. 2:11-cv-755	Prepared an expert report concerning collateralized debt obligations (CDOs) and analyzed three leveraged synthetic CDO transactions five Wisconsin school districts entered into in 2006, assessed the various risks, and opined on the accuracy of certain statements made to the school districts about those investment risks. Testified at deposition.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. Credit Suisse Securities (USA), et al. U.S. District Court for the Southern District of New York Case No. 13-cv-6736 (DLC)	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from Credit Suisse. Testified at deposition.

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<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. Goldman Sachs, et al. U.S. District Court for the Southern District of New York Case No. 13-cv-6721 (DLC)	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from Goldman Sachs. Testified at deposition.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. Goldman Sachs, et al. U.S. District Court for the Central District of California – Western Division Case No. 11-cv-6521 GW (JEMx)	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from Goldman Sachs. Testified at deposition.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. UBS Securities U.S. District Court for the Southern District of New York Case No. 13-cv-6731 (DLC)	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from UBS. Testified at deposition.
Goodmans	Ontario Superior Court of Justice (Commercial List) In the Matter of the Companies' Creditors Arrangement Act, R.S.C. 1985, c. C-36, as Amended And in the Matter of a Proposed Plan of Compromise or Arrangement with Respect to U.S. Steel Canada Inc. Court File No. CV-14-10695- 00CL	Prepared an expert report concerning the distinguishing characteristics of debt and equity and evaluating from a financial point of view whether the principal terms of the U.S. Steel Canada Term Loan and Revolving Credit Loan were more equity-like than debt-like as of the date of issuance. Testified at trial in Toronto.
Labaton Sucharow	In re Amgen Inc., Securities Litigation U.S. District Court for the Central District of California Western Division Case No. CV 07-2536 PSG (PLAx)	Prepared expert report concerning loss causation and damages and prepared rebuttal and reply reports responding to defendants' expert reports concerning loss causation and damages issues. Testified at deposition.
Orrick, Herrington & Sutcliffe	Hemlock Semiconductor Corporation v. Deutsche Solar GmbH U.S. District Court for the Eastern District of Michigan Northern Division Case No. 1:13-CV-11037	Prepared an expert report explaining the economic characteristics of take-or-pay agreements, describing the benefits Deutsche Solar received under four supply agreements, identifying the harm to Hemlock resulting from the contract breaches, and quantifying the nominal value of Deutsche Solar's unfilled purchased obligations. Testified at deposition.

Appendix A

<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Lowenstein Sandler	In re Petrobras Securities Litigation Case No. 14-cv-9662 (JSR) Discovery Global Citizens Master Fund, Ltd., et al. v. Petroleo Brasileiro S.A., et al. U.S. District Court for the Southern District of New York Case No. 15-cv-9126 (JSR)	Prepared an expert report concerning the efficiency of the market for the common ADS and preferred ADS of Petrobras and also concerning loss causation and damages to purchasers of the common ADS, preferred ADS, and an issue of Petrobras Global Finance notes in a 10b-5 and Section 11 securities fraud matter. Also prepared a reply report. Testified at deposition.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. Credit Suisse Securities (USA), et al. U.S. District Court for the District of Kansas Case No. 12-2648 JWL/JPO	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from Credit Suisse. Testified at deposition.
Kellogg, Huber, Hansen, Todd, Evans & Figel Korein Tillery	National Credit Union Administration Board v. UBS Securities, et al. U.S. District Court for the District of Kansas Case No. 12-cv-2591 JWL	Prepared an expert report and a rebuttal expert report that provide relevant background information concerning residential mortgage-backed securities (RMBS) and the market for RMBS and calculates the amounts of NCUA's claims for damages as a result of their purchase of RMBS from UBS. Testified at deposition.
Susman Godfrey	GE Funding Capital Market Services, Inc. and Trinity Funding Company, LLC v. Nebraska Investment Finance Authority U.S. District Court for the Southern District of New York 15 Civ.1069 (LGS)	Prepared an expert report explaining how the defendant's unilateral extension of seven GIC contracts after the associated municipal bonds were redeemed reflected a valuable option, for which plaintiffs would have charged in the GIC contract prices if they had intended the contracts to incorporate such an extension option. Testified at deposition.
Lewis Roca Rothgerber Christie	James J. Cotter, Jr. v. Margaret Cotter, et al. District Court, Clark County, Nevada Case No. A-15-719860-B, Dept. No. XI	Prepared a rebuttal expert report opining on the event study and other statistical analyses and the conclusions in an expert report submitted by the defendants' expert. Testified at deposition.
Sullivan & Cromwell	In re: Term Commodities Cotton Futures Litigation U.S. District Court for the Southern District of New York Master Docket No. 12-cv-5126 (ALC) (KNF)	Prepared a responsive expert report and a rebuttal expert report opining on the event studies, supply of storage models, and other statistical analyses and the conclusions in several expert reports submitted by the plaintiffs' expert. Testified at deposition.
Coss and Momjian	Stephen Todd Walker v. Morgan Stanley Smith Barney, LLC, et al. FINRA Arbitration FINRA Case Nos. 10-04094, 10-04888, and 11-01780	Prepared an expert report and an expert rebuttal report concerning the damages allegedly suffered by a registered representative due to tortious interference, defamation, unfair competition, and conversion by a broker dealer. Testified at arbitration.

Appendix A

<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Bernstein Litowitz Berger & Grossmann Labaton Sucharow	In re Facebook, Inc., IPO Securities and Derivative Litigation U.S. District Court for the Southern District of New York MDL No. 12-2389 (RWS)	Prepared an expert report and a rebuttal expert report concerning the damages allegedly suffered by plaintiffs due to material misstatements and omissions in an IPO prospectus under Sections 11 and 12 of the Securities Act of 1933 and responding to conclusions in expert reports submitted by the defendants' experts. Testified at deposition.
Grais & Ellsworth	Federal Deposit Insurance Corporation as Receiver for Colonial Bank v. Credit Suisse First Boston Mortgage Securities Corp., et al. Circuit Court of Montgomery County, Alabama Civil Action No. 03-CV-2012-901035.00	Prepared an expert report that calculates the amounts of damages Colonial Bank allegedly suffered as a result of its purchase of RMBS from the defendants. Damages are calculated under Sections 11 and 12 of the Securities Act of 1933 and under the blue sky laws of the states of Alabama and Nevada. Testified at deposition.
Grais & Ellsworth	Federal Deposit Insurance Corporation as Receiver for Colonial Bank v. Morgan Stanley & Co., et al. Circuit Court of Montgomery County, Alabama Civil Action No. 03-CV-2012-901036.00	Prepared an expert report that calculates the amounts of damages Colonial Bank allegedly suffered as a result of its purchase of RMBS from the defendants. Damages are calculated under Sections 11 and 12 of the Securities Act of 1933 and under the blue sky laws of the states of Alabama and Nevada. Testified at deposition.
Kellogg, Hansen, Todd, Figel & Frederick Korein Tillery	CMFG Life Insurance Company, et al. v. Morgan Stanley & Co. U.S. District Court for the Western District of Wisconsin Case No. 13-cv-577 (JDP)	Prepared an expert report that calculates the amounts of damages the plaintiffs allegedly suffered as a result of their purchase of RMBS from the defendant. Damages are calculated under equitable common law. Testified at deposition.
Lowenstein Sandler	Broadway Gate Master Fund, Ltd., et al. v. Ocwen Financial Corporation, et al. U.S. District Court for the Southern District of Florida Case No. 9:16-CV-80056-WPD	Prepared an expert report concerning the efficiency of the market for the common stock of Ocwen Financial and also concerning loss causation and damages to purchasers of the common stock in a 10b-5 securities fraud opt-out matter. Testified at deposition.
Grais & Ellsworth	Federal Deposit Insurance Corporation as Receiver for United Western Bank v. RBS Acceptance Inc., et al. U.S. District Court for the District of Colorado Civil Action No. 1:14-cv-00418-PAB-MJW	Prepared an expert report that calculates the amount of damages United Western Bank allegedly suffered as a result of its purchase of RMBS from the defendants. Damages are calculated under the blue sky laws of the state of Colorado. Testified at deposition.
Shumaker, Loop & Kendrick	Ameriprise Financial Services v. Cheryle Anne Brady FINRA Arbitration FINRA Case No. 16-03368	Prepared an expert report concerning the damages allegedly suffered by a registered representative who claimed to have been wrongfully terminated by a broker dealer. Testified at arbitration.

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<i>Clients</i>	<i>Case</i>	<i>Description of Testimony</i>
Pryor Cashman	Carbures Europe, S.A., et al. v. Emerging Markets Intrinsic Cayman Ltd., et al. Supreme Court of the State of New York, County of New York Index No. 653892/15	Prepared an expert report explaining what hedging common stock price risk exposure involves, distinguishing such hedging from simply selling shares of common stock without regard for the risk being offset, describing alternative mechanisms for settling liabilities through the payment of cash or the delivery of securities, and explaining why settling a liability through payment in shares of common stock is not costless. Testified at deposition.
Hunton & Williams	AMCO Insurance Company, et al. v. CoBank, ACB U.S. District Court for the Southern District of New York Case No. 16-cv-4422 (LTS)	Prepared an expert report and a rebuttal report explaining how institutional investors could reasonably be expected to invest the cash proceeds from an allegedly premature bond redemption and calculated damages. Testified at deposition.
Grais & Ellsworth	Federal Deposit Insurance Corporation as Receiver for Guaranty Bank v. Goldman, Sachs, et al. U.S. District Court for the Western District of Texas Austin Division Civil Action No.14-cv-129-SS	Prepared an expert report that calculates the amount of damages Guaranty Bank allegedly suffered as a result of its purchase of RMBS from the defendants. Damages are calculated under the blue sky laws of the state of Texas. Testified at deposition.
Grais & Ellsworth	Federal Deposit Insurance Corporation as Receiver for Guaranty Bank v. RBS Securities U.S. District Court for the Western District of Texas Austin Division Civil Action No. 14-cv-126-SS	Prepared an expert report that calculates the amount of damages Guaranty Bank allegedly suffered as a result of its purchase of RMBS from the defendant. Damages are calculated under the blue sky laws of the state of Texas. Testified at deposition.
Robbins Geller Rudman & Dowd	China Development Industrial Bank v. Morgan Stanley, et al. Supreme Court of the State of New York, County of New York Index No. 650957/2010	Prepared an expert report and a reply expert report calculating the plaintiff's damages under a credit default swap mark-to-market theory and also under a rescission theory. Testified at deposition.
Orrick, Herrington & Sutcliffe	Hemlock Semiconductor Corporation v. Green Energy Technology and Tatung Co. of America State of Michigan in the Circuit Court for the County of Saginaw Case No. 13-020593-CK-1	Prepared an expert report and an expert rebuttal report opining as to the reliability of the spot market prices PVinsights reports for solar-grade polycrystalline silicon and calculating damages resulting from the repudiation of a long-term purchase agreement for solar-grade polycrystalline silicon. Testified at deposition.

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16. John D. Finnerty, "Measuring the Duration of a Floating-Rate Bond," Journal of Portfolio Management (Summer 1989), pp. 67-72. Reprinted in Sanjay K. Nawalkha and Donald R. Chambers, eds., Interest Rate Risk Measurement and Management. Institutional Investor Books, New York, 1999, ch. 32.
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i. October 30, 2014

1. On Wednesday, October 29, 2014, after the market closed, Allstate released its earnings results for the third quarter of 2014.¹ Allstate reported revenue of \$8,936 million, net income of \$750 million, and operating income of \$598 million for the quarter.² It reported operating earnings per share (“EPS”) of \$1.39, which was above the consensus EPS estimate of \$1.33.

In the press release, the Company highlighted that:³

- Allstate grew across brands and customer segments while generating excellent profitability, despite a significant increase in losses from severe weather.
 - Over the last year, we added 790,000 policies in force, a 2.4% improvement, and net written premiums increased by \$1.4 billion for the trailing twelve months. The Allstate brand increased both auto and homeowners policies, reflecting the execution of a comprehensive growth plan.
 - Profitability was also strong and consistent with our strategic direction and a proactive approach to managing risk and return. Net income was \$750 million and operating income was \$598 million for the quarter, as the underlying combined ratio⁴ was better than the annual outlook range of 87 - 89 and limited partnership results were higher than the prior year.
2. Allstate also highlighted its growing insurance policies in force stating that “Allstate Protection insurance policies in force increased by 790,000, or 2.4%, in the third quarter of 2014 versus the same period last year, reflecting broad-based geographic growth across

¹ Allstate Press Release, “Allstate Reports Broad-Based Growth and Strong Profitability,” October 29, 2014.

² *Id.*, p. 1.

³ *Id.*, pp. 1-2.

⁴ “Combined ratio” measures an insurance company’s profitability expressed as a ratio of total costs divided by total revenue. Specifically, the combined ratio is calculated as the sum of incurred losses and expenses divided by earned premiums. Incurred Losses refer to actual monies paid out in claims plus the change in “loss reserves.” Loss reserves are liabilities—these are claims that have occurred but have not been paid out yet by an insurer. “Underlying combined ratio” is calculated excluding catastrophe losses from the incurred losses. A combined ratio below 100 percent indicates that the company earns an underwriting profit.

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customer segments and product offerings.”⁵ In Particular, the Company noted that “the Allstate brand grew insurance policies in force by 572,000, or 1.9% in the third quarter of 2014 compared to the prior year quarter, after reflecting a comprehensive plan to generate profitable growth.”⁶

3. The next day on October 30, 2014, at 9:00 AM ET, Allstate held a conference call to discuss its earnings results with securities analysts. During the call, Allstate provided an overview of its earnings results for the third quarter of 2014 and discussed its strategies and 2014 operating priorities.⁷ The Company reiterated its strong results across the business lines in the quarter, highlighting its increased growth in Allstate branded auto policies in force as well as homeowners policies in force. In response to Allstate’s third quarter of 2014 earnings release, a number of securities analysts issued analysts’ reports.
4. Sandler O’Neill + Partners, in an analyst report issued on October 29, 2014, noted that Allstate beat its earnings estimate of \$1.37 primarily due to the Company’s underwriting outperformance, a lower than expected effective tax rate, and a greater than anticipated amount of share repurchases, which were offset by lower than expected investment income and life insurance operating income.⁸ In a subsequent report issued on October 30, 2014, Sandler O’Neill + Partners slightly increased its price target for Allstate’s common stock to \$71 from \$69.⁹
5. Janney Capital Markets issued an analyst report noting that Allstate’s operating earnings of

⁵ *Id.*, p. 2.

⁶ *Id.*

⁷ Bloomberg L.P., Transcript, “Allstate Earnings Q3 2014 Earnings Call Teleconference,” October 30, 2014.

⁸ Sandler O’Neill + Partners, L.P., “3Q14 First Look: Reports \$1.39 vs. \$1.37 SOP,” October 29, 2014, at 1.

⁹ Sandler O’Neill + Partners, L.P., “3Q14 Earnings Review: Maintaining BUY Rating,” October 30, 2014, at 2.

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\$1.39 were below its estimate of \$1.41.¹⁰ It noted that Allstate's underwriting was in line with its estimate and that "better than expected [property and casualty] investment income (due to partnerships) offset a modest shortfall in Life."¹¹ Consequently, it stated that it did not expect a significant market price reaction in response to the Company's earnings results. In a subsequent report issued on October 31, 2014, Janney Capital Markets reiterated its EPS estimates for 2014 and 2015.¹²

6. Sterne Agee issued a flash note on October 30, 2014 stating that Allstate's EPS was better than its estimate of \$1.26.¹³ However, it stated that the EPS beat was largely driven by "higher alternatives and buyback" and expected that, while core combined ratio was better than estimated, there would be "margin risk looking forward as Allstate Brand pricing is close to flat and likely below long term loss trend."¹⁴
7. RBC Capital Markets, in an analyst report issued on October 30, 2014, noted that Allstate's operating EPS of \$1.39 was short of its estimate of \$1.45 primarily due to weaker-than-expected investment income.¹⁵ RBC Capital Markets raised its price target for Allstate's common stock to \$70 from \$66 and reiterated its Outperform rating on Allstate's stock.
8. Morgan Stanley, in an analyst report issued on October 30, 2014, noted that Allstate's

¹⁰ Janney Capital Markets, "Allstate, Initial Thoughts on 3Q14 Results," October 29, 2014, at 1.

¹¹ *Id.*

¹² Janney Capital Markets, "Allstate, Updated Model," October 31, 2014, at 1.

¹³ Sterne, Agee & Leach Inc., "Allstate Corp., 3Q14 Beat Largely Driven by Alternatives and Buyback; Underlying CR Slightly Better," October 30, 2014.

¹⁴ *Id.*

¹⁵ RBC Capital Markets, "The Allstate Corporation, Staying the Course," October 30, 2014, at 1.

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operating EPS was slightly below its estimate of \$1.42.¹⁶ It highlighted the Company's better-than-estimated underlying margin, improved core margin, improved growth in policies in force in both Allstate auto and homeowners, increased net investment income, and increased share repurchases. In a subsequently issued analyst report on October 31, 2014, Morgan Stanley stated that it maintained its Equal-weight on Allstate's stock noting strong momentum of the Allstate franchise but increasing competition in the personal auto marketplace.¹⁷

9. Wells Fargo, in an analyst report issued on October 30, 2014, reiterated the Company's strong earnings results with respect to the increase in Allstate branded auto policies in force as well as homeowners policies in force.¹⁸ Accordingly, Wells Fargo raised its price target range for Allstate's common stock to \$69-73 from \$66-70.
10. Compass Point issued an analyst report stating that Allstate outperformed its estimates despite the late increase in catastrophe losses for the third quarter.¹⁹ Compass Point maintained its Neutral rating on Allstate's common stock and raised its price target to \$68 from \$63.
11. Based on the earnings results released and the securities analysts' assessments, I would expect Allstate's common stock to elicit a modest positive price reaction in light of the Company's strong positive underwriting performance offset by lower-than-estimated investment income and increased competition in the personal auto marketplace during the

¹⁶ Morgan Stanley & Co. LLC, "Allstate Corporation, PIF Growth and Share Buyback Headline Solid 3Q," October 30, 2014.

¹⁷ Morgan Stanley & Co. LLC, "Allstate Corporation, All In For (Profitable) Growth," October 31, 2014.

¹⁸ Wells Fargo Securities, LLC, "ALL: Conference Call Round-up; Homeward Bound," October 30, 2014, at 1.

¹⁹ Compass Point Research & Trading, LLC, "ALL beats Lowered Estimates; Underlying Loss Ratio Better," October 30, 2014.

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quarter, which analysts expected would continue over the following few quarters. None of the securities analysts who issued reports adjusted their recommendations for Allstate's common stock. A few analysts marginally raised their price targets for Allstate's common stock.²⁰ The abnormal return on Wednesday, October 30, 2014 was 0.97 percent for Allstate's common stock. (*See* Exhibit 9.) The abnormal return is positive, as expected, and statistically significant at the 10 percent level, which is consistent with how an efficient market would be expected to react.²¹

ii. February 5, 2015

12. On Wednesday, February 4, 2015, after the market closed, Allstate released its earnings results for the fourth quarter of 2014.²² Allstate reported revenue of \$8,759 million, net income of \$795 million, and operating income of \$736 million for the quarter.²³ It reported operating EPS of \$1.72, which was slightly above the consensus EPS estimate of \$1.67. The Company highlighted in the press release that its “strategy to serve customers with unique value propositions enabled the property-liability businesses to increase policies in force across all three underwritten brands... The underlying combined ratio was at the favorable end of the full-year outlook range, as the negative impact of adverse fourth quarter frequency on auto margins was more than offset by [its] focus on profitable growth.” Allstate further

²⁰ *See, e.g.*, Sandler O'Neill + Partners, L.P., “3Q14 Earnings Review: Maintaining BUY Rating,” October 30, 2014, at 2; RBC Capital Markets, “The Allstate Corporation, Staying the Course,” October 30, 2014, at 1; Wells Fargo Securities, LLC, “ALL: Conference Call Round-up; Homeward Bound,” October 30, 2014, at 1; and Compass Point Research & Trading, LLC, “ALL beats Lowered Estimates; Underlying Loss Ratio Better,” October 30, 2014.

²¹ A 10% level of statistical significance indicates that there is less than a 1 in 10 chance that the observed abnormal return happened by mere chance.

²² Allstate Press Release, “Allstate Reports Broad-Based Growth and Strong Profitability,” October 29, 2014.

²³ Allstate Press Release, “Allstate Reports Broad-Based Growth and Strong Profitability,” October 29, 2014, at 1.

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stated regarding the increase in claims frequency that:²⁴

An increase in claim frequency in the first two months of the quarter adversely impacted the combined ratio for auto insurance, with the Allstate brand auto combined ratio rising to 97.0. This was 1.7 points higher than the prior year. The impact of precipitation in select markets and general economic trends will both be reflected in pricing as necessary to maintain adequate returns. Excellent homeowners profitability brought the property-liability recorded combined ratio to 90.0 for the quarter.

13. The next day on February 5, 2015 at 9:00 AM ET, Allstate held a conference call to discuss its earnings results with securities analysts. During the call, Allstate provided an overview of its earnings results for the fourth quarter of 2014 and discussed its strategies and 2014 operating priorities.²⁵ The discussion during the call primarily focused on the growth in the Allstate brand, an increase in auto claims frequency in October and November, pricing and margin, and capital management. In response to an analyst's question concerning the uptick in auto claims frequency, Allstate's CEO answered that there was no indication that the uptick was related to the quality of the business or driven by growth.²⁶ He reiterated that the higher auto claims frequency was primarily driven by economic activity, such as a falling unemployment rate, as well as increased precipitation in certain areas of the country. In response to Allstate's fourth quarter of 2014 earnings release, a number of securities analysts issued reports.
14. Wells Fargo, in an analyst report issued on February 4, 2015, noted that Allstate's fourth

²⁴ Allstate Press Release, "Allstate Reports Broad-Based Growth and Strong Profitability," October 29, 2014, at 2.

²⁵ Bloomberg L.P., Transcript, "Allstate Earnings Q4 2014 Earnings Call Teleconference," February 5, 2015.

²⁶ *Id.*

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quarter operating EPS of \$1.72 beat its expectation of \$1.60.²⁷ Wells Fargo stated that the earnings beat was primarily due to better-than-expected non-life insurance underwriting results, reflecting a lower level of catastrophe losses and higher reserve releases. However, it added that the positive underlying results were offset by an increase in auto frequency trends during the quarter “due to greater U.S. economic activity.”²⁸ Wells Fargo also commented that it expected “a negative bias to Allstate share price movement reflecting the higher frequency trends seen in the quarter.”²⁹

15. Wells Fargo released a subsequent report after the conference call on February 5, 2015.

Concerning the high auto claims frequency, Wells Fargo noted that:³⁰

Allstate attributed the higher auto claims frequency to greater economic activity fueled by a falling unemployment rate as well as precipitation (causing slick roads) in several markets during prime driving hours. Frequency was up in October and November but dropped in December. Company commentary on the call pointed to satisfactory frequency experience in January as well. Beyond this, Allstate also illustrated a recurring pattern of higher frequency in Q4 results in recent years including 2010 and 2011 while attributing seasonality in 2012 as getting caught up in catastrophe losses associated with Superstorm Sandy.

16. Evercore ISI issued an analyst report on February 4, 2015 stating that it was “incrementally more cautious” on its Hold rating on Allstate’s stock because the underlying combined ratio was higher than forecasted “due to an increase in personal auto claim frequency.”³¹ It suspected, however, that the higher personal auto claims frequency for Allstate could have

²⁷ Wells Fargo Securities, LLC, “ALL: Q4 First Look—Frequency Blip Overshadows Earnings Beat,” February 4, 2015, at 1.

²⁸ *Id.*

²⁹ *Id.*

³⁰ Wells Fargo Securities, LLC, “ALL: Conference Call Round-up – Frequency Concern Overblown,” February 5, 2015, at 1.

³¹ Evercore ISI, “ALL Brand PIF Growth Accelerated But AYCR Ex Cats Misses,” February 4, 2015, at 1.

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been driven by the significant growth in policy in force of the Company, given that its competitors had not cited similar issues for the same quarter. Citing these concerns, Evercore ISI reduced its price target for Allstate's common stock to \$71 from \$72.

17. In a subsequent report released after the conference call on February 5, 2015, Evercore ISI believed that the uptick in auto claims frequency could be "a bump in the road for a couple of months rather than significant mid-pricing of the business or growth issues."³² However, given that it did not see a similar tick up in frequency reported by competitors, it noted that it would wait to draw any conclusions.
18. Janney Capital Markets, in an analyst report issued on February 4, 2015, noted that while Allstate's overall earnings results for the fourth quarter were in line with its expectations, the Company's underlying underwriting results were disappointing, which it expected would have a negative impact on Allstate's common stock price.³³
19. UBS, in an analyst report issued on February 4, 2015, noted that Allstate's fourth quarter EPS was slightly below its estimate of \$1.76 primarily due to a worse-than-estimated underlying loss, higher underwriting expenses, and lower investment income, which were partially offset by lower catastrophe losses, more favorable reserve development, and higher life insurance operating income.³⁴ UBS highlighted the Company's deterioration in its combined ratio, which was primarily driven by "an acceleration in standard auto bodily injury frequency and severity in the quarter." UBS also expressed its concern noting that the

³² Evercore ISI, "More Comfortable with Frequency Uptick in Oct/Nov Post Conference Call, Improving Encompass Results," February 5, 2015, at 1.

³³ Janney Capital Markets, "Allstate, Initial Thoughts on 4Q14 Results," February 4, 2015, at 1.

³⁴ UBS Securities LLC, "Allstate Corp., Earnings in Line, but Auto Frequency and Severity Tick Up," February 4, 2015, at 1.

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increase in frequency would have a potential negative impact on the Company's profit margin.

20. Deutsche Bank, in an analyst report released on February 4, 2015, noted that Allstate's EPS was in line with its forecast, mainly driven by the mixed results with lower-than-forecast catastrophe losses and higher auto accident frequency trends in October and November.³⁵ Deutsche Bank viewed that Allstate's bottom line forecast that was modestly below the consensus would likely have a negative impact on Allstate's common stock price.
21. Sandler O'Neill + Partners released an analyst report on February 4, 2015 stating that Allstate beat its fourth quarter operating EPS estimate because the Company's underwriting outperformance and higher-than-expected earned premium served to more than offset lower-than-estimated life insurance operating income and net investment income.³⁶ However, Sandler O'Neill + Partners expressed concerns that, while the bottom-line results were better than expected, the worse-than-expected combined ratio and higher claims frequency were of concern.
22. Sandler O'Neill + Partners, in a subsequent report released on February 6, 2015, suggested that Allstate's underlying combined ratio was not anticipated to improve in 2015.³⁷ It also reiterated Allstate's remark that the increase in claims frequency was attributable to increased miles driven. Accordingly, Sandler O'Neill + Partners downgraded Allstate's common stock to Hold from Buy and reduced its price target to \$76 from \$78 based on its

³⁵ Deutsche Bank Securities Inc., "4Q14 EPS In-Line: 87-89% 'Core' Combined Ratio for 2015," February 4, 2015, at 1.

³⁶ Sandler O'Neill + Partners, L.P., "4Q14 First Look: Reports \$1.72 vs. \$1.67 SOP," February 4, 2015, at 1.

³⁷ Sandler O'Neill + Partners, L.P., "4Q14 Earnings Review: Downgrading to HOLD from BUY," February 6, 2015, at 1-2.

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concern regarding Allstate's worse-than-expected underlying combined ratio and an increase in claims frequency.

23. Overall, Allstate's fourth quarter earnings results were broadly in-line with analysts' forecasts and their assessments of Allstate's outlook. The majority of the securities analysts, after the earnings press release on February 4, 2015, initially raised concerns about Allstate's reduced combined ratio, which was primarily driven by an increase in claims frequency. However, the analysts later indicated that the increase in claims frequency was less of a concern after hearing Allstate management's explanation during the conference call that the increase was primarily driven by the weather and number of miles driven. In light of the slightly lower consensus regarding Allstate's short-term earnings outlook, a number of securities analysts lowered their ESP estimates for 2015-2016 and/or their price targets for Allstate's common stock.³⁸ Based on this information, I would expect Allstate's common stock to elicit a negative price reaction. The abnormal return on Thursday, February 5, 2015 was -1.34 percent for Allstate's common stock. (*See Exhibit 9.*) The abnormal return is negative, as expected, and statistically significant at the 5 percent level, which is consistent with how an efficient market would be expected to react.³⁹

iii. May 6, 2015

24. On Tuesday, May 5, 2015, after the market closed, Allstate released its earnings results for the first quarter of 2015. Allstate reported revenue of \$8,952 million, net income of \$648

³⁸ *See, e.g.,* Evercore ISI, "More Comfortable with Frequency Uptick in Oct/Nov Post Conference Call, Improving Encompass Results," February 5, 2015, at 1; and Sterne, Agee & Leach Inc., "4Q14 Core Miss on Increased Auto Loss Trend, NII and Life Income; Reducing Ests and Price Target," February 5, 2015, at 1

³⁹ A 5% level of statistical significance indicates that there is less than a 1 in 20 chance that the observed abnormal return happened by mere chance.

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million, and operating income of \$616 million for the quarter.⁴⁰ It reported operating EPS of \$1.46, which was slightly above the consensus EPS estimate of \$1.44. The Company highlighted in the press release that the “Allstate brand had good growth and return in auto, home and other lines of insurance. The strength of homeowners returns, including low catastrophe losses, more than offset the impact of increased economic activity on auto margins which is being factored into our pricing.”⁴¹ Regarding its first quarter operating results compared to the prior year quarter, Allstate emphasized its slightly improved property-liability combined ratio, higher underwriting income, but slightly worse underlying combined ratio.⁴² Allstate also highlighted that “auto losses were elevated in the first quarter, reflecting seasonal winter weather and higher non-weather levels of frequency and severity in all three brands...”⁴³

25. The next day on May 6, 2015 at 9:00 AM ET, Allstate held a conference call to discuss its earnings results with securities analysts. During the call, Allstate provided an overview of its earnings results for the first quarter of 2015 and discussed its strategies and 2015 operating priorities.⁴⁴ The main topics during the call included the Company’s auto frequency and severity trends, non-catastrophe weather-related losses, plans for the pricing actions on the auto book, and the sustainability of the growth in policies in force. A number of securities analysts issued reports in response to Allstate’s first quarter of 2015 earnings release.

⁴⁰ Allstate Press Release, “Allstate’s Broad-Based Business Model Generates Profitable Growth,” May 5, 2015, at 1.

⁴¹ *Id.*

⁴² *Id.*, at 2.

⁴³ *Id.*, at 2.

⁴⁴ Bloomberg L.P., Transcript, “Allstate Earnings Q1 2015 Earnings Call Teleconference,” May 6, 2015.

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26. Wells Fargo, in an analyst report issued on May 5, 2015, stated that Allstate's first quarter operating EPS of \$1.46 slightly beat its expectation of \$1.45 noting that "the modest upside reflects better-than expected life results and a lower corporate loss."⁴⁵ It further noted that the Company's non-life results were in line with its expectations due to stronger investment income, which was offset by weaker underwriting results; lower-than-expected catastrophe losses that were more than offset by adverse reserve development; and auto results that were impacted by elevated frequency trends for the second consecutive quarter. Wells Fargo was particularly concerned about the Company's persistently higher auto frequency trends, which Wells Fargo believed were partly due to the winter storms and to an elevated number of accidents industry-wide and across the country.
27. In a subsequent report issued on May 6, 2015 after the conference call, Wells Fargo noted that the main focus during the conference call was on "elevated frequency trends, pricing actions, and the sustainability of policies in force growth."⁴⁶ It noted in the report that:
- For the second consecutive quarter, Allstate posted higher auto loss frequency – both for bodily injury claims and for physical damage claims. Some of the frequency was associated with tough winter weather but the majority was a function of greater miles driven following on improved employment. The company's actuaries examined frequency trends across a number of factors including whether there was an influence from greater new business being written, a dominant geography, a specific type of customer (monoline vs. multi-line) and other driver household characteristics. The analysis points to miles driven and frequency trends being up for auto insurers broadly as opposed to being ALL specific.
28. Deutsche Bank in an analyst report released on May 5, 2015 noted that Allstate's EPS was

⁴⁵ Wells Fargo Securities, LLC, "ALL: First Look at Q1 Results—Frequency Concerns Remain," May 5, 2015, at 1.

⁴⁶ Wells Fargo Securities, LLC, "ALL: Conference Call Round-up: Frequency Is Everyone's Problem," May 6, 2015, at 1.

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better than its forecast of \$1.37.⁴⁷ It noted that the outperformance was primarily driven by the Company's property and casualty investment income from limited partnership and stronger than forecasted share repurchases. It further commented that the factors including adverse development in property and casualty, increasing auto frequency trends and the worse-than-expected total property and casualty underlying combined ratio would have a negative impact on Allstate's stock price.

29. UBS issued an analyst report on May 5, 2015 noting that Allstate's operating EPS beat its estimate of \$1.27, mainly due to the Company's lower-than-expected catastrophe losses, higher limited partnership income, and a lower expense ratio, which were offset by a higher underlying loss ratio and adverse reserve development.⁴⁸ It raised concerns about the Company's increase in claims frequency and deteriorating companywide underlying combined ratio, which it believed were "largely driven by an acceleration in auto bodily injury and physical damage frequency in the quarter..., due to both winter weather and economic activity."⁴⁹
30. RBC Capital Markets, in an analyst report issued on May 5, 2015, noted that Allstate's operating EPS was in line with its estimate.⁵⁰ However, RBC Capital Markets expressed its concern about the Company's uptick in auto claims frequency and severity for the second straight quarter, noting that "the overall combined ratio was weaker than expected due to a higher auto combined ratio (non-cat weather and frequency claims trends), which was offset

⁴⁷ Deutsche Bank Securities Inc., "Modest 1Q15 Beat on Solid P&C Alt Investment Income," May 5, 2015, at 1.

⁴⁸ UBS Securities LLC, "Allstate Corp., Beat on Lower Cat Losses, but Auto Frequency Ticks Up Again," May 5, 2015, at 1.

⁴⁹ *Id.*

⁵⁰ RBC Capital Markets, "The Allstate Corporation, Rising Auto Claims Frequency Overshadows Solid Q1," May 5, 2015, at 1.

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by better-than-anticipated investment income and lower corporate expenses.” Accordingly, RBC Capital Markets lowered its price target for Allstate’s common stock to \$77 from \$78.

31. Morgan Stanley, in an analyst report released on May 7, 2015, highlighted Allstate’s rising auto frequency for two consecutive quarters.⁵¹ It stated concerns regarding the trend that:

Management attributes the rising frequency trend to (1) higher mileage driven due to improving economy; and (2) winter weather. Allstate views the uptick in auto claims as an industry trend rather than company specific. Nonetheless, they are taking proactive actions by pulling forward rate increases planned for later in 2015. Management is confident that the pricing increases will not slow PIF growth as competitors likely have to raise prices as well.... The effectiveness of pricing increases and potential impact on PIF growth remains a near term overhang for the stock.

32. Accordingly, Morgan Stanley lowered its price target for Allstate’s common stock to \$70 from \$72.
33. Overall, Allstate’s first quarter of 2015 earnings results were largely in-line with analysts’ forecasts and their overall assessments concerning Allstate’s outlook. However, the majority of securities analysts raised concerns about the higher auto claims frequency trends that were evident for the second quarter in a row. A number of securities analysts lowered their ESP estimates for 2015/2016 and/or their price targets for Allstate’s common stock.⁵² Based on this information, I would expect Allstate’s common stock to elicit a negative stock price reaction. The abnormal return on Wednesday, May 6, 2015 was -3.58 percent for Allstate’s common stock. (*See Exhibit 9.*) The abnormal return is negative, as expected, and statistically significant at the 1 percent level, which is consistent with how an efficient

⁵¹ Morgan Stanley & Co. LLC, “Allstate Corporation, Rising Auto Frequency A Near Term Overhang,” May 7, 2015, at 1.

⁵² *See, e.g.*, Sandler O’Neill + Partners, L.P., “1Q15 Earnings Review: Maintaining HOLD rating,” May 6, 2015, at 1-2; Credit Suisse, “Lowering TP Following Continuation of Soft (Though Somewhat Expected) Auto,” May 6, 2015, at 1; and RBC Capital Markets, “The Allstate Corporation, Rising Auto Claims Frequency Overshadows Solid Q1,” May 5, 2015, at 1.

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market would be expected to react.⁵³

iv. August 4, 2015

34. On Monday, August 3, 2015, after the market closed, Allstate released its earnings results for the second quarter of 2015. Allstate reported revenue of \$8,982 million, net income of \$326 million, and operating income of \$262 million for the quarter.⁵⁴ It reported operating EPS of \$0.63, which was significantly below the consensus EPS estimate of \$0.97. The Company noted in the press release concerning the spike in auto losses that:

Allstate's proactive approach to strategy and operating performance resulted in a rapid adjustment to continued increases in auto losses. Our second quarter operating income of \$262 million was lower than last year, reflecting increased frequency and severity of auto accidents. The increase in auto accidents is broad-based by state, risk class, rating plans and the maturity of the business, and consequently appears to be driven by external factors. While recent growth in Allstate brand auto policies in force did increase frequency, since new business typically has higher relative frequency, this was not the primary driver of a higher combined ratio. We have responded aggressively to improve profitability with rate increases, tighter underwriting standards and expense reductions.

35. The next day on August 4, 2015 at 9:00 AM ET, Allstate held a conference call to discuss its earnings results with securities analysts. During the call, Allstate provided an overview of its second quarter of 2015 results and discussed its strategies and 2015 operating priorities.⁵⁵ The main topics of the call included the auto claims frequency and severity trends, its pricing actions, the growth in policies in force, and capital management. Concerning the "significantly elevated" claims frequency for the quarter, The President of Allstate reiterated that the increase was primarily driven by external factors. However, he admitted that the

⁵³ A 1% level of statistical significance indicates that there is less than a 1 in 100 chance that the observed abnormal return happened by mere chance.

⁵⁴ Allstate Press Release, "Allstate Maintains Focus on Profitability," August 3, 2015, at 1.

⁵⁵ Bloomberg L.P., Transcript, "Allstate Earnings Q2 2015 Earnings Call Teleconference," August 4, 2015.

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growth rate of Allstate's "new auto business" contributed to the increase in claims frequency.

He specifically noted that:

As you know, new business normally runs at a higher frequency level than renewal customers. We often refer to this as a new business penalty. With that in mind, we want to quantify this impact in our auto book, particularly in light of the positive growth trends we've experienced over the past couple of years. So we analyzed how the volume of new auto business we've written in the past two years has impacted our results and our analysis indicated that the new business growth rate is having between a half a point and a point impact on the auto loss ratio. This impact was expected and manageable. It is, however, a contributing factor to the higher frequency we are seeing. We continue to monitor new to renewal trends across our 15 local market operating committees in the U.S. and Canada.

36. In response to Allstate's second quarter of 2015 earnings release, a number of securities analysts issued reports.
37. UBS, in an analyst report issued on August 3, 2015, noted that Allstate's operating EPS of \$0.63 was considerably below its estimate of \$1.04, which was mainly driven by a higher underlying loss ratio, adverse reserve development, and lower limited partnership income.⁵⁶ UBS particularly expressed its concern about the continued increase in claims frequency to the extent that the companywide underlying combined ratio deteriorated due to increases in auto bodily injury and physical damage frequency in the quarter.
38. Wells Fargo stated in an analyst report issued on August 3, 2015 that Allstate's operating EPS was below its estimate of \$0.77 primarily due to "continued elevated auto claims frequency" and "lower investment income stemming from real estate joint ventures."⁵⁷ Wells Fargo also reiterated Allstate's statement that the continued increase in auto claims

⁵⁶ UBS Securities LLC, "Allstate Corp., 2Q15: Auto Frequency Ticks Up Again in a Tough Quarter," August 3, 2015, at 1.

⁵⁷ Wells Fargo Securities, LLC, "ALL: First Look at Q2 Results – Frequency Crashes Q2 Results," August 3, 2015, at 1.

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frequency was mainly driven by a growing economy rather than the growth in auto policies-in-force count.

39. Deutsche Bank released an analyst report on August 3, 2015 stating that Allstate missed its earnings forecast primarily due to larger catastrophe losses and the increase in accident frequency.⁵⁸ Deutsche Bank further noted regarding the auto claims frequency that:

Back in February 2015, management had observed an October/November 2014 spike in accident-frequency that abated in December and seemed to be muted in 1Q15. Management now observes accident frequency increases broadly across all geographies, segments, rating plans and degrees of customer tenure. Allstate auto brand bodily injury and property damage claim frequencies were up 6.8% and 6.9%, respectively, from 2Q14 levels.

Allstate, with 11% market share widespread across the country is a good proxy for auto trends industrywide. Strangely, Allstate's woes did not appear in competitor accident-year loss ratios for 2Q15... Allstate will argue that, as it has become an increasingly data-heavy business with more market share than any publicly traded company, its ability to detect trends has improved relative to peers. We believe these Allstate results are likely to seep into investor concerns over the auto line in general, but, until others confirm Allstate's experience, it will generally be viewed as an Allstate-specific problem.

Consequently, Deutsche Bank expected that Allstate's second quarter earnings announcement would have a negative impact on Allstate's common stock.

40. RBC Capital Markets, in an analyst report released on August 4, 2015, noted that Allstate's results were disappointing as the Company's EPS largely missed its estimate of \$1.05.⁵⁹ RBC Capital Markets pointed out that the earnings miss was largely driven by higher-than-expected auto claims frequency and slightly weaker-than-expected investment income. Accordingly, RBC Capital Markets lowered its price target for Allstate's common stock to \$69 from \$77 and also lowered its rating to Sector Perform from Outperform.

⁵⁸ Deutsche Bank Securities Inc., "4Q14 Auto Accident Frequency Tickle Balloons in 2Q15," August 3, 2015, at 1.

⁵⁹ RBC Capital Markets, LLC, "Margins Disappoint, Lowering to Sector Perform," August 4, 2015, at 1.

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41. RBC Capital Markets, in a subsequently released note after the conference call, raised concerns about the Company's worsening frequency trend noting that the continued increase in loss frequency and severity trends would not improve in the near term.⁶⁰ It summarized the discussion during the conference call as follows:

- The higher auto claims frequency trend is broad based by geography although management indicated that the uptick in new business (which typically has lower margins than existing customers) has been having an adverse impact on the loss ratio (management estimates 0.5 to 1.0 loss ratio points).
- The company continues to believe that macro factors & higher miles driven are largely responsible for the uptick in claims frequency, which was coming off very low levels during 2014.
- In addition to higher frequency, Allstate is watching out for higher auto severity loss trends as they are monitoring a few factors, including the increase in complexity of vehicles (ie. technologies installed in cars), higher car parts costs, and an increase in labor repair costs.
- To address the uptick in claims trends, the company is (1) implementing price increases selectively across underperforming areas (2) tightening underwriting standards and (3) taking expense actions. Price increases won't be influenced by what its peers are doing although we believe many are seeing similar trends and are hiking rates too.
- As the company implements these initiatives to restore margins, management anticipates its auto growth rate to "dampen" over the next few quarters while still achieving positive growth.
- Capital management plans aren't impacted by the recent uptick in loss cost trends (the company's current buyback authorization is \$1.9 billion).
- Allstate continues to shift invested assets into lower-duration securities and equities, which should help mitigate interest rate risk somewhat if interest rates rise but will also adversely impact investment income.

42. Overall, Allstate's second quarter earnings results fell substantially below the analysts' forecasts and their overall assessments concerning Allstate's outlook. The majority of securities analysts raised concerns about the higher auto frequency trends that were evident

⁶⁰ RBC Capital Markets, LLC, "Allstate (ALL) Q2 Conference Call Highlights," August 4, 2015.

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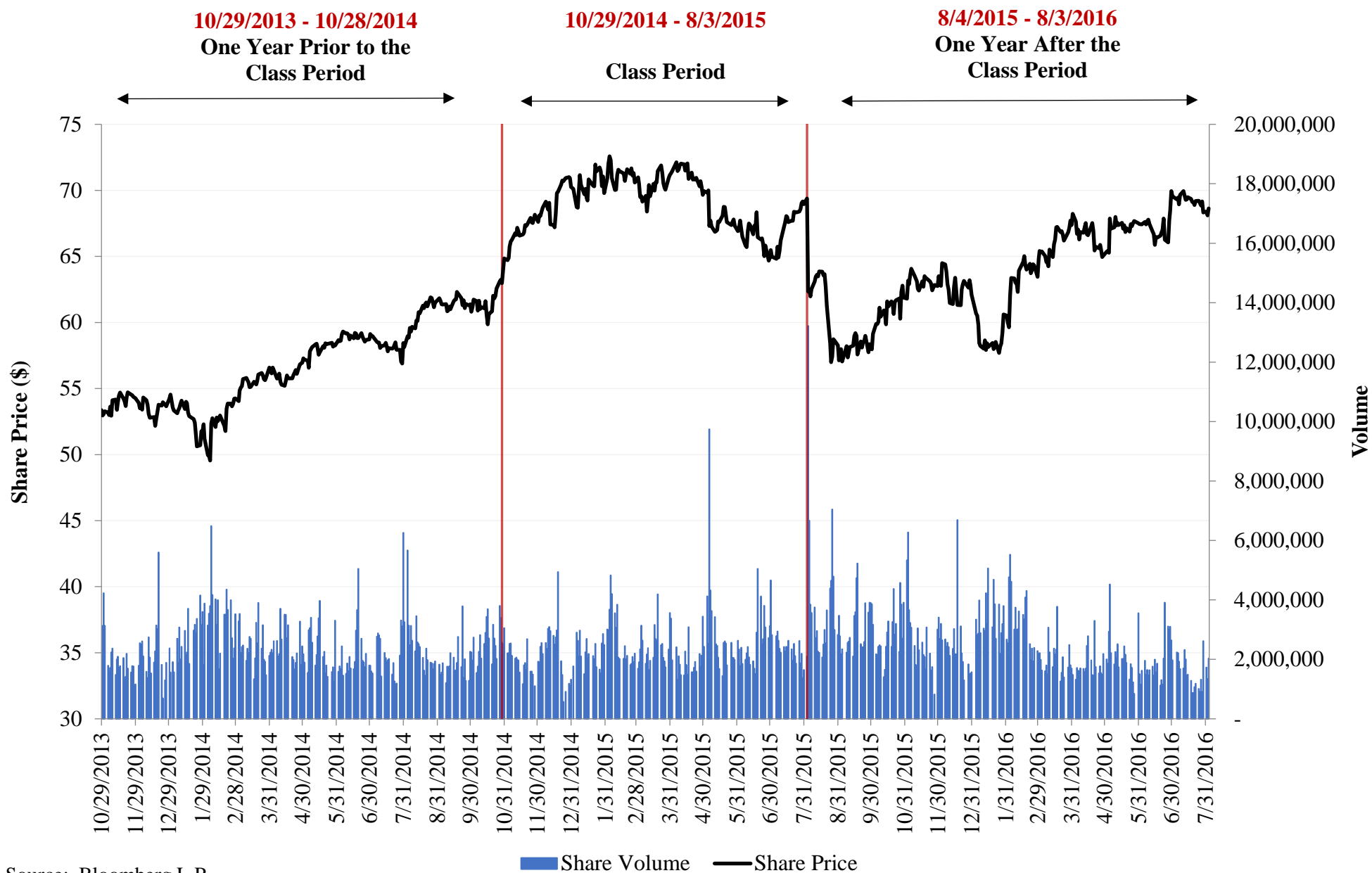
for the third quarter in a row. Although Allstate insisted that the deteriorating auto claims frequency trends were primarily attributable to external factors, a number of securities analysts raised concerns, given that similar trends had not been reported by Allstate's main competitors during the period. For example, Sandler O'Neill + Partners believed that the phenomenon might be a company-specific issue relating to its auto insurance underwriting.⁶¹ Accordingly, a number of securities analysts lowered their EPS estimates for 2015/2016 and/or their price targets for Allstate's common stock.⁶² Based on this information, I would expect Allstate's common stock to elicit a significant negative stock price reaction. The abnormal return on Tuesday, August 4, 2015 was -10.02 percent for Allstate's common stock. (See Exhibit 9.) The abnormal return is negative, as expected, and statistically significant at the 1 percent level, which is consistent with how an efficient market would be expected to react.⁶³

⁶¹ Sandler O'Neill + Partners, L.P., "2Q15 Earnings Review: Maintaining HOLD Rating," August 5, 2015, at 1.

⁶² See, e.g., Credit Suisse, "Magnitude of EPS Miss Distracting but Rate Action Plan on Schedule," August 3, 2015, at 1; Morgan Stanley & Co. LLC, "Frequency and Severity Push Losses Higher for Third Straight Quarter," August 5, 2015, at 1; Compass Point Research and Trading, LLC, "What's the Frequency Allstate?; Maintain Neutral," August 4, 2015, at 1; and Wells Fargo Securities, LLC, "ALL; Conference Call Round-Up—Allstate Runs Out of Gas in Q2," August 4, 2015, at 1.

⁶³ A 1% level of statistical significance indicates that there is less than a 1 in 100 chance that the observed abnormal return happened by mere chance.

Exhibit 1
In re: The Allstate Corporation Securities Litigation
Daily Price and Volume Movement



Source: Bloomberg L.P.

Exhibit 2

In re: The Allstate Corporation Securities Litigation
Trading Volume and Share Turnover during the Class Period
October 29, 2014 - August 3, 2015

Panel A. Weekly Trading Volume^[1]

	<u>Shares Traded</u>	<u>as % of Shares Outstanding</u>
Mean	11,946,270	2.89%
Median	10,990,211	2.69%
Minimum	4,893,833	1.17%
Maximum	29,389,398	7.34%

Panel B. Share Turnover

Total Volume	455,305,059
Average Shares Outstanding	414,088,228
Time Period (years)	0.76
Annualized Turnover Ratio ^[2]	143.85%

Notes:

^[1] Statistics include those weeks that include any days during in the Class Period.

^[2] Turnover ratio during the Class Period is calculated as Total Volume divided by Average Shares Outstanding during the Class Period divided by Time Period (in years).

Source: Bloomberg L.P.

Exhibit 3
In re: The Allstate Corporation Securities Litigation
NYSE Common Stock Annualized Turnover Ratio
October 2014 - August 2015

Month/Year	NYSE Annualized Monthly Turnover
October 2014	66.0%
November 2014	54.0%
December 2014	64.0%
January 2015	64.0%
February 2015	58.0%
March 2015	64.0%
April 2015	56.0%
May 2015	57.0%
June 2015	65.0%
July 2015	61.0%
August 2015	68.0%
Average	61.5%

Source: NYSEData.com Factbook - NYSE Group Turnover.

Exhibit 4
In re: The Allstate Corporation Securities Litigation
Analyst Report Coverage during the Class Period
October 29, 2014 - August 3, 2015

Contributors

Barclays	Morningstar
Buysellsignals Research	RBC Capital Markets
CFRA Equity Research	Sadif Analytics
Citi	Sandler Oneill & Partners
Compass Point	Seensco
Credit Suisse	Smart Insider
Deutsche Bank	Stern Agee
Drexel Hamilton	SunTrust Robinson Humphrey
Evercore ISI	Thomson Reuters
Janney Montgomery Scott	UBS Research
JMP Securities	Validea
JPMorgan	Valuengine
Macquarie Research	Wells Fargo
Marketline	William Blair & Company
MKM Partners	Wright Investors Service
Morgan Stanley	

Number of Securities Firms: 31

Source: Thomson Reuters.

In re: The Allstate Corporation Securities Litigation
The Allstate Corporation Quarterly Holdings During the Class Period^[1]

Number of Shares Held Reported for the Quarter Ending as of December 31, 2014

Shares Outstanding as of October 15, 2014: 419,433,284

Ran k	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held ^[2]
1	BlackRock, Inc. (NYSE:BLK)	24,090,118	5.74%	1,573,252
2	The Vanguard Group, Inc.	21,916,138	5.23%	343,760
3	State Street Global Advisors, Inc.	19,589,394	4.67%	296,159
4	Boston Partners Global Investors, Inc.	12,772,082	3.05%	753,328
5	Franklin Resources, Inc. (NYSE:BEN)	9,428,204	2.25%	359,414
6	Macquarie Investment Management Business Trust	7,744,525	1.85%	37,479
7	Allianz Asset Management AG	7,134,610	1.70%	280,788
8	Teachers Insurance and Annuity Association of America	7,104,135	1.69%	188,408
9	Capital Research and Management Company	7,000,000	1.67%	-
10	Invesco Ltd. (NYSE:IVZ)	6,638,156	1.58%	1,271,644
	All 1,000 Other Institutional Holders	212,703,436	50.71%	44,364,289
Total		336,120,798	80.14%	49,468,521

Number of Shares Held Reported for the Quarter Ending as of June 30, 2015

Shares Outstanding as of April 21, 2015: 409,012,961

Ran k	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held ^[2]
1	BlackRock, Inc. (NYSE:BLK)	25,259,966	6.18%	92,358
2	The Vanguard Group, Inc.	22,504,188	5.50%	22,079
3	State Street Global Advisors, Inc.	17,517,066	4.28%	875,665
4	Boston Partners Global Investors, Inc.	10,706,837	2.62%	2,109,008
5	Franklin Resources, Inc. (NYSE:BEN)	10,602,659	2.59%	1,291,407
6	AllianceBernstein L.P.	9,878,971	2.42%	685,687
7	Macquarie Investment Management Business Trust	9,014,738	2.20%	852,149
8	Capital Research and Management Company	7,000,000	1.71%	-
9	Northern Trust Global Investments	6,047,971	1.48%	149,850
10	Invesco Ltd. (NYSE:IVZ)	5,929,482	1.45%	74,681
	All 999 Other Institutional Holders	197,566,332	48.30%	47,309,327
Total		322,028,210	78.73%	53,462,211

Number of Shares Held Reported for the Quarter Ending as of March 31, 2015

Shares Outstanding as of January 30, 2015: 416,426,585

Ran k	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held ^[2]
1	BlackRock, Inc. (NYSE:BLK)	25,352,324	6.04%	1,262,206
2	The Vanguard Group, Inc.	22,526,267	5.37%	610,129
3	State Street Global Advisors, Inc.	18,392,731	4.39%	1,196,663
4	Boston Partners Global Investors, Inc.	12,815,845	3.06%	43,763
5	Franklin Resources, Inc. (NYSE:BEN)	9,311,252	2.22%	116,952
6	AllianceBernstein L.P.	9,193,284	2.19%	2,935,870
7	Macquarie Investment Management Business Trust	8,162,589	1.95%	418,064
8	Capital Research and Management Company	7,000,000	1.67%	-
9	Allianz Asset Management AG	6,822,196	1.63%	312,414
10	BNY Mellon Asset Management	6,238,635	1.49%	106,856
	All 1,021 Other Institutional Holders	203,643,587	48.55%	38,574,156
Total		329,458,710	79.12%	45,577,073

Number of Shares Held Reported for the Quarter Ending as of September 30, 2015

Shares Outstanding as of July 20, 2015: 400,389,900

Ran k	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held ^[2]
1	BlackRock, Inc. (NYSE:BLK)	25,135,324	6.28%	124,642
2	The Vanguard Group, Inc.	21,804,348	5.45%	699,840
3	State Street Global Advisors, Inc.	16,783,237	4.19%	733,829
4	AllianceBernstein L.P.	11,174,571	2.79%	1,295,600
5	Franklin Resources, Inc. (NYSE:BEN)	11,020,474	2.75%	417,815
6	Macquarie Investment Management Business Trust	9,606,392	2.40%	591,654
7	Capital Research and Management Company	5,750,000	1.44%	1,250,000
8	Northern Trust Global Investments	5,679,908	1.42%	368,063
9	BNY Mellon Asset Management	5,617,154	1.40%	80,443
10	LSV Asset Management	5,526,485	1.38%	163,430
	All 965 Other Institutional Holders	191,081,805	47.72%	72,578,901
Total		309,179,698	77.22%	78,304,217

Notes:

^[1] Class Period is between October 29, 2014 and August 3, 2015.

^[2] Change in Securities Held is the sum of the absolute values of the changes in shares held by each individual institutional holder.

Sources: Capital IQ and The Allstate Corporation's Forms 10-K and 10-Q.

Exhibit 6

In re: The Allstate Corporation Securities Litigation
Market Makers in Allstate's Common Stock

Panel A. List of Market Makers from October 2014 through August 2015 ^[1]

Total Number of Market Makers	122
with Volume Exceeding 1 Million Shares	13

**Panel B. List of Market Makers with Volume Exceeding 1 Million Shares
from October 2014 through August 2015**

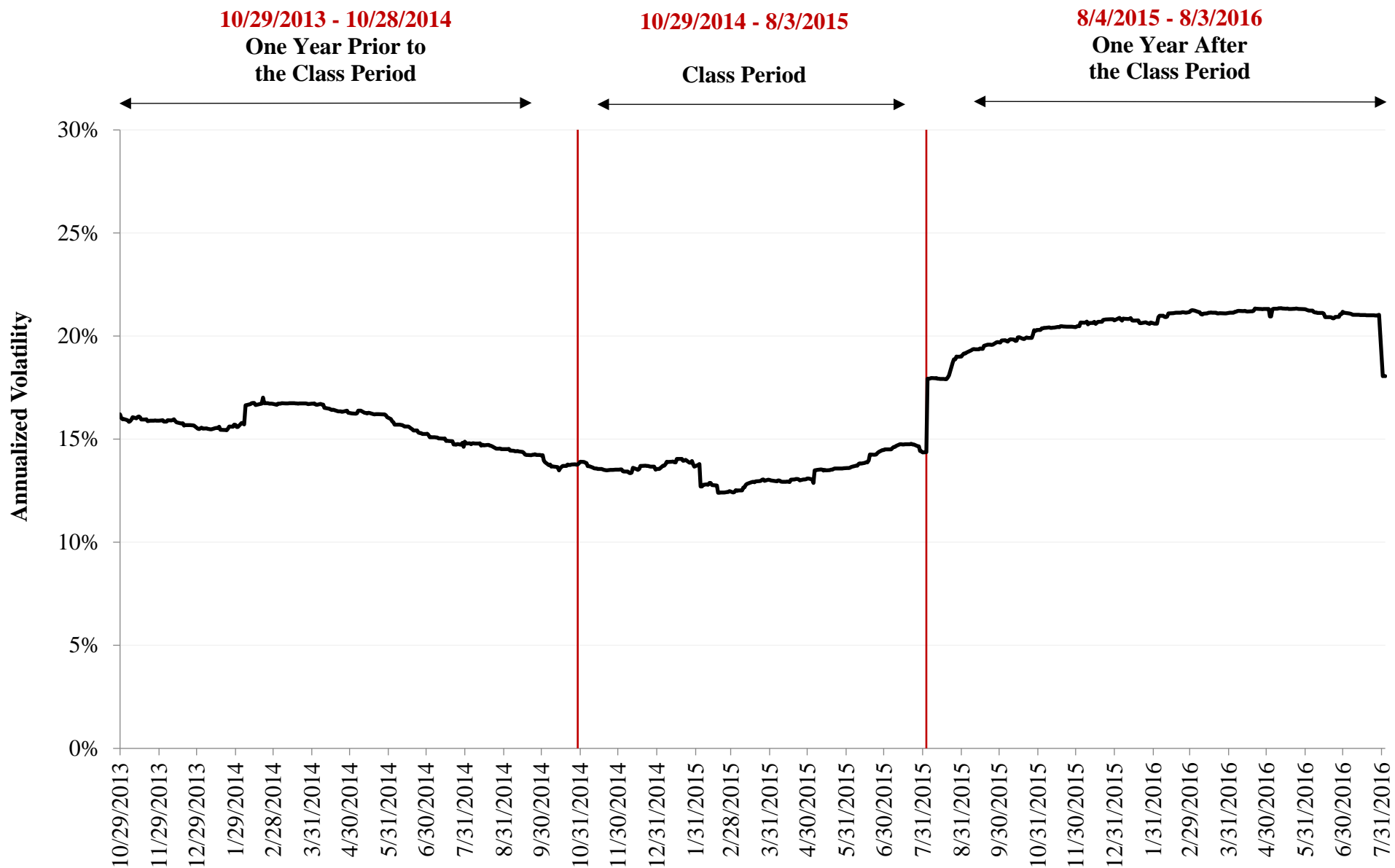
1	Morgan Stanley & Co., Incorporated	8	Deutsche Bank Securities Inc.
2	UBS Securities LLC.	9	Tradebot Systems, Inc.
3	J.P. Morgan Securities Inc.	10	BNP Paribas Securities Corp.
4	Electronic Transaction Clearing, Inc.	11	Jump Trading, LLC
5	Barclays Capital Inc.	12	Sanford C. Bernstein And Co. I
6	Goldman Sachs	13	Virtu Americas LLC
7	Instinet Corporation		

Note:

^[1] Class Period is from October 29, 2014 to August 3, 2015.

Source: Bloomberg L.P.

Exhibit 7
In re: The Allstate Corporation Securities Litigation
Trailing 1-Year Annualized Stock Volatility



Source: Bloomberg L.P.

Exhibit 8

In re: The Allstate Corporation Securities Litigation

List of News Events during the Class Period

Page 1 of 3

Event Date	Time	Effective Trading Date ^[1]	Form of Information Release	Allegation	Information Release/Omission ^[2]	Complaint
10/29/2014	4:12 PM	10/30/2014	Press Release for Q3 2014 Earnings and Filing of Form 10-Q	Misrepresentation	Allstate reported operating EPS of \$1.39, which was above the consensus EPS estimate of \$1.33. Allstate allegedly misrepresented that it implemented a "comprehensive plan to generate profitable growth" and omitted the fact that the Company experienced a steep increase in its claims frequency and omitted that the Company's greatly reduced underwriting standards caused the increase in claims frequency.	¶¶56-62
10/30/2014	9:00 AM	10/30/2014	Earnings Conference Call	Misrepresentation	Defendants allegedly misrepresented that "our frequency so far has been extremely favorable to prior year," adding, "so our frequency trends have been good." Allstate allegedly omitted the fact that the Company experienced a steep increase in its claims frequency and omitted that the Company's greatly reduced underwriting standards caused the increase in claims frequency.	¶¶63-64
12/9/2014	11:44 AM	12/9/2014	Goldman Sachs Investor Conference	Misrepresentation	Allstate's CEO allegedly misrepresented that Allstate "tweaked" its models to improve retention and he felt "good about auto insurance in general in terms of its profitability." He allegedly failed to disclose that paid bodily injury claims frequency had already increased by 4% in 3Q 2014. Defendants allegedly misrepresented that Allstate's increase in loss cost was consistent with the normal trends and omitted the fact that the Company's greatly reduced underwriting standards had caused the increase in claims frequency.	¶¶65-69
2/4/2015	4:00 PM	2/5/2015	Press Release for Q4 2014 Earnings	Misrepresentation Partial Disclosure	Allstate reported operating EPS of \$1.72, which was above the consensus EPS estimate of \$1.67. Allstate first revealed that its claims frequency had increased. However, Allstate allegedly misrepresented that the increase in claims frequency was caused by external factors and omitted the fact that the Company's greatly reduced underwriting standards had caused the increase in claims frequency.	¶¶70-72

Exhibit 8

In re: The Allstate Corporation Securities Litigation

List of News Events during the Class Period

Page 2 of 3

Event Date	Time	Effective Trading Date ^[1]	Form of Information Release	Allegation	Information Release/Omission ^[2]	Complaint
2/5/2015	9:00 AM	2/5/2015	Earnings Conference Call	Misrepresentation Partial Disclosure	Defendants revealed that Allstate had experienced an "uptick" in the Company's claims frequency in October 2014. Defendants allegedly misrepresented that "two factors [that] traditionally drive PD frequency: miles driven and precipitation" and that the increase in claims frequency was not related to the factors specific to the Company. Defendants allegedly omitted the fact that the Company's greatly reduced underwriting standards had caused claims frequency increase.	¶¶73-74
2/19/2015	9:41 AM	2/19/2015	Filing of 2014 10-K	Misrepresentation	In its 2014 10-K, Defendants allegedly misrepresented that an increase in claims frequency for Q4 2014 was caused by external factors, including "severe winter weather," "higher miles driven" and "higher precipitation." Defendants allegedly omitted the fact that the Company's greatly reduced underwriting standards had caused the increase in claims frequency.	¶¶77-79
5/5/2015	4:10 PM	5/6/2015	Press Release for Q1 2015 Earnings and Filing of Form 10-Q	Misrepresentation Partial Disclosure	Allstate reported operating EPS of \$1.46, which was slightly above the consensus EPS estimate of \$1.44. Allstate reported an increase in claims frequency for the second consecutive quarter. However, Allstate allegedly misrepresented that "Allstate's strategy of building a broad-based business model continued to generate profitable growth" and omitted the fact that the Company's greatly reduced underwriting standards had caused claims frequency increase. In its Q1 2015 10-Q, Allstate also allegedly misrepresented that an increase in claims frequency for Q1 2015 was caused by external factors, including "adverse winter weather" and omitted the fact that the Company's greatly reduced underwriting standards had caused the increase in claims frequency.	¶¶80-85
5/6/2015	9:00 AM	5/6/2015	Earnings Conference Call	Misrepresentation	Defendants allegedly misrepresented that "recent frequency fluctuations are due primarily to macroeconomic trends in weather" and "miles driven," and omitted the fact that the Company's greatly reduced underwriting standards had caused the increase in claims frequency.	¶¶87-90

Exhibit 8

In re: The Allstate Corporation Securities Litigation

List of News Events during the Class Period

Page 3 of 3

Event Date	Time	Effective Trading Date ^[1]	Form of Information Release	Allegation	Information Release/Omission ^[2]	Complaint
5/28/2015	2:00 PM	5/28/2015	Sanford C. Bernstein Strategic Decisions Conference	Misrepresentation	Defendants allegedly misrepresented that the increase in claims frequency was viewed as "normal volatility" and omitted the fact that the Company's greatly reduced underwriting standards caused the increase in claims frequency.	¶¶94-95
8/3/2015	4:49 PM	8/4/2015	Press Release for Q2 2015 Earnings	Disclosure	Allstate reported operating EPS of \$0.63, which was substantially below the consensus EPS estimate of \$0.97. Allstate reported an increase in claims frequency for the third consecutive quarter. Defendants revealed that "recent growth in Allstate brand auto policies in force did increase [in] frequency" and that "Allstate had responded with tighter underwriting standards."	¶¶104-105
8/4/2015	9:00 AM	8/4/2015	Earnings Conference Call	Disclosure	Defendants admitted that "new business growth (achieved by greatly reducing Allstate's underwriting standards) had contributed to the higher frequency" of claims and required "tightening some of our underwriting parameters." Defendants also admitted that this impact "was expected."	¶¶106-107

Notes:

^[1] Information released after 4:00PM or during non-trading days is used to explain stock returns the next trading day.

^[2] See Complaint. Includes any news events related to the alleged fraud, inclusive of any potentially false and misleading statements, material omissions, and potentially corrective disclosures.

Sources: SEC Edgar, Bloomberg L.P., and S&P Capital IQ.

Exhibit 9

In re: The Allstate Corporation Securities Litigation
Calculation of Abnormal Returns Using the Modified Fama-French Three-Factor Model
And a Custom Market-Weighted Industry Index ^[1]
Control Period: 10/29/2014 - 8/3/2015 (Class Period) with 6 Dates Excluded^[2]

Panel A. Fitting the Modified Fama-French Three-Factor Model ^[3]

Regression: $R_{OCN}-R_F = b_0 + b_1(Mkt-R_F) + b_2(SMB) + b_3(HML) + b_4(\text{Custom Industry Index Return})$

Regression Period: 10/29/2014 - 8/3/2015 (Class Period)

	Coeff.	StdErr	t-stat	p-value		
β_0	0.0004	0.0004	0.9655	0.3356	R-squared	0.6743
β_1	0.4663	0.1517	3.0734	0.0024	Adjusted R-squared	0.6671
β_2	0.0664	0.0968	0.6858	0.4937	S.E. of regression	0.0053
β_3	0.2203	0.1043	2.1124	0.0360	Sum squared resid	0.0050
β_4	0.4805	0.1784	2.6936	0.0077	Log likelihood	710.6555
					F-statistic	93.1845
					Mean dependent var	0.0007
					S.D. dependent var	0.0091
					Akaike info criterion	-7.6287
					Schwarz criterion	-7.5417
					Hannan-Quinn criter.	-7.5934
					Durbin-Watson stat	1.8993

Panel B. Calculation of the Abnormal Return(s) on Select Date(s)

Date	R _F	Mkt-R _F	SMB	HML	Industry Index ^[1]	Predicted Return	Actual Return	Abnormal Return	t-stat	p-value	Sig
10/30/2014	0.00%	0.60%	0.27%	-0.48%	0.59%	0.51%	1.48%	0.97%	1.837	0.068	*
12/9/2014	0.00%	0.13%	1.71%	-0.28%	-1.02%	-0.34%	-0.45%	-0.10%	-0.197	0.844	
2/5/2015	0.00%	1.10%	0.48%	-0.16%	0.86%	0.96%	-0.39%	-1.34%	-2.548	0.012	**
2/19/2015	0.00%	-0.01%	0.28%	-0.35%	-0.10%	-0.07%	0.65%	0.72%	1.375	0.171	
5/6/2015	0.00%	-0.31%	0.64%	-0.13%	-0.35%	-0.26%	-3.84%	-3.58%	-6.796	0.000	***
5/28/2015	0.00%	-0.12%	0.10%	0.13%	0.09%	0.06%	0.28%	0.22%	0.427	0.670	
8/4/2015	0.00%	-0.14%	0.09%	-0.19%	-0.12%	-0.12%	-10.15%	-10.02%	-19.039	0.000	***

Notes:

^[1] Market-weighted custom index comprised of members of the S&P 500 Property & Casualty Insurance Index ("S5PROP Index"), excluding Allstate. The members include: (1) The Progressive Corporation, (2) The Travelers Companies, Inc., (3) The Chubb Corporation, (4) Cincinnati Financial Corporation, (5) XL Group Ltd, and (6) Chubb Limited (formerly ACE Limited).

^[2] I excluded all fraud-related news event dates alleged in the Complaint.

^[3] Modified Fama-French Three-Factor model was run with the White heteroskedasticity adjustment for heteroskedasticity-adjusted standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Source: Bloomberg L.P.

In re: The Allstate Corporation Securities Litigation
Regression Results for the Modified Fama-French Model Including a Custom Index as an Explanatory Variable
Page 1 of 6

Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
10/29/2014	62.98		-0.40%	-0.18%	-0.02%	0.44%	-0.46%	-0.17%	-0.22%	-0.424	0.672	
10/30/2014	63.91		1.48%	0.60%	0.27%	-0.48%	0.59%	0.51%	0.97%	1.837	0.068	*
10/31/2014	64.85		1.47%	1.23%	0.29%	0.19%	0.80%	1.06%	0.41%	0.787	0.432	
11/3/2014	64.72		-0.20%	-0.01%	-0.26%	-0.06%	-0.39%	-0.19%	-0.01%	-0.024	0.981	
11/4/2014	64.89		0.26%	-0.35%	-0.04%	-0.11%	0.89%	0.27%	-0.01%	-0.016	0.987	
11/5/2014	65.74		1.31%	0.48%	-0.53%	0.86%	0.60%	0.70%	0.61%	1.154	0.250	
11/6/2014	66.13		0.59%	0.49%	0.09%	-0.48%	0.22%	0.27%	0.32%	0.612	0.541	
11/7/2014	66.25		0.18%	0.09%	0.02%	0.44%	0.22%	0.28%	-0.10%	-0.187	0.852	
11/10/2014	66.76		0.77%	0.33%	0.19%	-0.50%	0.57%	0.37%	0.40%	0.769	0.443	
11/11/2014	66.63		-0.19%	0.10%	0.02%	-0.29%	-0.31%	-0.13%	-0.07%	-0.126	0.900	
11/12/2014	67.17		0.81%	0.07%	0.77%	-0.28%	0.12%	0.12%	0.70%	1.320	0.189	
11/13/2014	66.92		-0.37%	-0.03%	-0.91%	-0.33%	0.10%	-0.07%	-0.31%	-0.582	0.561	
11/14/2014	66.58		-0.51%	0.06%	-0.14%	0.14%	-0.40%	-0.11%	-0.40%	-0.760	0.448	
11/17/2014	66.66		0.12%	-0.05%	-0.98%	0.27%	0.29%	0.15%	-0.02%	-0.047	0.962	
11/18/2014	66.79		0.20%	0.51%	0.05%	-0.36%	0.22%	0.30%	-0.11%	-0.200	0.841	
11/19/2014	67.37		0.87%	-0.21%	-0.93%	-0.06%	0.37%	0.04%	0.83%	1.572	0.118	
11/20/2014	67.29		-0.12%	0.31%	0.88%	-0.02%	0.33%	0.39%	-0.51%	-0.974	0.331	
11/21/2014	67.40		0.16%	0.48%	-0.39%	-0.09%	0.22%	0.32%	-0.15%	-0.292	0.771	
11/24/2014	67.92		0.77%	0.40%	0.94%	-0.57%	0.31%	0.31%	0.46%	0.877	0.382	
11/25/2014	67.58	0.28	-0.09%	-0.08%	0.07%	-0.04%	-0.28%	-0.14%	0.05%	0.100	0.920	
11/26/2014	67.52		-0.09%	0.30%	0.09%	-0.45%	0.46%	0.31%	-0.39%	-0.749	0.455	
11/28/2014	68.15		0.93%	-0.35%	-0.93%	-1.02%	0.19%	-0.32%	1.26%	2.388	0.018	**
12/1/2014	67.61		-0.79%	-0.90%	-0.97%	0.61%	0.04%	-0.29%	-0.50%	-0.946	0.345	
12/2/2014	68.11		0.74%	0.65%	0.42%	0.05%	0.19%	0.47%	0.27%	0.512	0.609	
12/3/2014	68.07		-0.06%	0.46%	0.45%	0.31%	0.43%	0.56%	-0.61%	-1.168	0.244	
12/4/2014	68.39		0.47%	-0.17%	-0.31%	0.09%	0.15%	0.03%	0.44%	0.841	0.401	
12/5/2014	68.68		0.42%	0.25%	0.57%	0.25%	0.07%	0.28%	0.15%	0.279	0.781	
12/8/2014	69.14		0.67%	-0.82%	-0.59%	0.26%	1.11%	0.20%	0.47%	0.886	0.377	
12/9/2014	68.83		-0.45%	0.13%	1.71%	-0.28%	-1.02%	-0.34%	-0.10%	-0.197	0.844	
12/10/2014	68.55		-0.41%	-1.72%	-0.62%	-0.10%	-0.93%	-1.28%	0.87%	1.651	0.100	
12/11/2014	69.06		0.74%	0.49%	-0.08%	-0.20%	0.31%	0.36%	0.38%	0.726	0.469	
12/12/2014	67.42		-2.37%	-1.55%	0.49%	-0.58%	-1.51%	-1.51%	-0.87%	-1.646	0.102	
12/15/2014	67.37		-0.07%	-0.68%	-0.26%	0.11%	-0.44%	-0.49%	0.41%	0.784	0.434	
12/16/2014	67.21		-0.24%	-0.80%	0.62%	0.60%	-0.45%	-0.38%	0.14%	0.270	0.788	

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Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
12/17/2014	68.22		1.50%	2.15%	0.85%	-0.10%	1.17%	1.63%	-0.13%	-0.250	0.803	
12/18/2014	69.79		2.30%	2.36%	-0.88%	-0.21%	1.29%	1.65%	0.65%	1.232	0.220	
12/19/2014	69.89		0.14%	0.43%	-0.22%	0.19%	0.03%	0.28%	-0.13%	-0.254	0.800	
12/22/2014	70.44		0.79%	0.37%	0.19%	-0.04%	0.47%	0.44%	0.35%	0.662	0.509	
12/23/2014	70.75		0.44%	0.21%	-0.26%	1.05%	0.81%	0.74%	-0.30%	-0.565	0.573	
12/24/2014	70.69		-0.08%	0.07%	0.36%	-0.17%	-0.18%	-0.03%	-0.05%	-0.098	0.922	
12/26/2014	70.93		0.34%	0.39%	0.37%	-0.32%	0.10%	0.22%	0.12%	0.225	0.822	
12/29/2014	71.00		0.10%	0.13%	0.16%	0.57%	0.26%	0.36%	-0.26%	-0.493	0.623	
12/30/2014	70.94		-0.08%	-0.48%	0.06%	0.35%	0.00%	-0.11%	0.02%	0.044	0.965	
12/31/2014	70.25		-0.97%	-0.93%	0.50%	-0.39%	-1.02%	-0.94%	-0.03%	-0.059	0.953	
1/2/2015	70.12		-0.19%	-0.11%	-0.59%	0.09%	-0.31%	-0.18%	0.00%	-0.006	0.995	
1/5/2015	68.73		-1.98%	-1.84%	0.33%	-0.63%	-1.22%	-1.53%	-0.46%	-0.866	0.388	
1/6/2015	68.68		-0.07%	-1.04%	-0.78%	-0.27%	-0.85%	-0.97%	0.90%	1.700	0.091	*
1/7/2015	69.81		1.65%	1.19%	0.17%	-0.65%	1.46%	1.16%	0.48%	0.918	0.360	
1/8/2015	71.15		1.92%	1.81%	-0.12%	-0.27%	1.82%	1.68%	0.24%	0.447	0.655	
1/9/2015	70.42		-1.03%	-0.85%	0.02%	-0.50%	-1.12%	-1.01%	-0.02%	-0.035	0.972	
1/12/2015	69.70		-1.02%	-0.79%	0.37%	-0.37%	-0.97%	-0.86%	-0.17%	-0.317	0.752	
1/13/2015	70.12		0.60%	-0.19%	0.28%	0.03%	0.15%	0.05%	0.56%	1.058	0.291	
1/14/2015	69.43		-0.98%	-0.60%	0.29%	-0.49%	-1.53%	-1.07%	0.08%	0.155	0.877	
1/15/2015	69.23		-0.29%	-1.08%	-0.95%	0.63%	0.18%	-0.31%	0.02%	0.036	0.972	
1/16/2015	70.84		2.33%	1.36%	0.47%	-0.14%	1.75%	1.51%	0.82%	1.549	0.123	
1/20/2015	70.36		-0.68%	0.11%	-0.67%	-0.55%	-0.86%	-0.49%	-0.19%	-0.357	0.722	
1/21/2015	70.30		-0.09%	0.42%	-0.95%	0.55%	-0.37%	0.11%	-0.20%	-0.376	0.707	
1/22/2015	71.95		2.35%	1.58%	0.46%	0.41%	2.55%	2.12%	0.23%	0.436	0.663	
1/23/2015	71.43		-0.72%	-0.47%	0.52%	-0.82%	-0.75%	-0.69%	-0.03%	-0.066	0.948	
1/26/2015	71.73		0.42%	0.42%	0.56%	-0.05%	0.22%	0.36%	0.06%	0.110	0.913	
1/27/2015	71.44		-0.40%	-1.21%	0.67%	0.23%	-0.91%	-0.87%	0.46%	0.882	0.379	
1/28/2015	70.32		-1.57%	-1.39%	-0.08%	-0.77%	-1.39%	-1.45%	-0.11%	-0.217	0.828	
1/29/2015	71.05		1.04%	0.98%	0.24%	0.00%	0.51%	0.75%	0.28%	0.539	0.591	
1/30/2015	69.79		-1.77%	-1.30%	-0.77%	0.03%	-2.45%	-1.79%	0.02%	0.039	0.969	
2/2/2015	70.91		1.60%	1.25%	-0.46%	0.99%	1.48%	1.52%	0.09%	0.168	0.867	
2/3/2015	72.03		1.58%	1.49%	0.18%	0.51%	1.14%	1.40%	0.18%	0.338	0.736	
2/4/2015	72.58		0.76%	-0.35%	-0.07%	-0.20%	0.61%	0.12%	0.65%	1.226	0.222	
2/5/2015	72.30		-0.39%	1.10%	0.48%	-0.16%	0.86%	0.96%	-1.34%	-2.548	0.012	**

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Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
2/6/2015	70.93		-1.89%	-0.20%	0.07%	0.38%	-0.15%	-0.04%	-1.86%	-3.524	0.001	***
2/9/2015	70.03		-1.27%	-0.46%	-0.39%	0.09%	-0.76%	-0.55%	-0.72%	-1.368	0.173	
2/10/2015	70.05		0.03%	1.04%	-0.31%	-0.69%	0.25%	0.47%	-0.44%	-0.837	0.404	
2/11/2015	71.18		1.61%	0.03%	-0.11%	-0.33%	0.74%	0.33%	1.29%	2.443	0.016	**
2/12/2015	71.57		0.55%	1.00%	0.18%	-0.09%	0.48%	0.73%	-0.18%	-0.339	0.735	
2/13/2015	71.46		-0.15%	0.47%	0.19%	-0.29%	0.14%	0.27%	-0.42%	-0.805	0.422	
2/17/2015	71.27		-0.27%	0.17%	-0.02%	0.00%	-0.12%	0.06%	-0.32%	-0.609	0.543	
2/18/2015	70.71		-0.79%	0.03%	0.28%	-0.81%	-0.05%	-0.13%	-0.65%	-1.238	0.217	
2/19/2015	71.17		0.65%	-0.01%	0.28%	-0.35%	-0.10%	-0.07%	0.72%	1.375	0.171	
2/20/2015	71.60		0.60%	0.61%	-0.41%	-0.26%	-0.04%	0.22%	0.39%	0.739	0.461	
2/23/2015	71.26		-0.47%	-0.08%	0.04%	-0.37%	-0.62%	-0.38%	-0.10%	-0.184	0.854	
2/24/2015	71.67		0.58%	0.32%	-0.05%	0.69%	0.72%	0.68%	-0.11%	-0.200	0.841	
2/25/2015	71.12		-0.77%	0.02%	0.22%	-0.51%	-0.32%	-0.20%	-0.56%	-1.069	0.286	
2/26/2015	71.31	0.30	0.69%	-0.08%	0.64%	-0.47%	0.59%	0.22%	0.47%	0.886	0.377	
2/27/2015	70.60		-1.00%	-0.36%	-0.21%	0.22%	-0.34%	-0.26%	-0.74%	-1.399	0.164	
3/2/2015	70.98		0.54%	0.62%	0.24%	-0.43%	0.69%	0.58%	-0.04%	-0.075	0.940	
3/3/2015	70.49		-0.69%	-0.43%	-0.31%	0.30%	-0.57%	-0.39%	-0.30%	-0.566	0.572	
3/4/2015	69.50		-1.40%	-0.41%	0.09%	-0.40%	-0.74%	-0.60%	-0.81%	-1.536	0.126	
3/5/2015	69.56		0.09%	0.15%	0.24%	-0.43%	0.60%	0.31%	-0.23%	-0.434	0.665	
3/6/2015	69.14		-0.60%	-1.29%	0.27%	0.43%	-0.99%	-0.93%	0.32%	0.615	0.540	
3/9/2015	69.59		0.65%	0.37%	0.08%	-0.02%	0.61%	0.50%	0.15%	0.282	0.778	
3/10/2015	68.39		-1.72%	-1.63%	0.42%	-0.47%	-1.98%	-1.75%	0.03%	0.052	0.959	
3/11/2015	69.09		1.02%	-0.04%	0.56%	0.52%	0.86%	0.58%	0.44%	0.843	0.400	
3/12/2015	70.40		1.90%	1.28%	0.38%	0.50%	1.84%	1.65%	0.25%	0.466	0.642	
3/13/2015	69.56		-1.19%	-0.57%	0.21%	-0.03%	-0.80%	-0.61%	-0.59%	-1.113	0.267	
3/16/2015	70.49		1.34%	1.23%	-0.77%	-0.41%	1.87%	1.37%	-0.03%	-0.057	0.955	
3/17/2015	69.98		-0.72%	-0.20%	0.54%	-0.02%	-0.21%	-0.13%	-0.60%	-1.136	0.258	
3/18/2015	70.62		0.91%	1.08%	-0.51%	0.00%	0.93%	0.95%	-0.04%	-0.074	0.941	
3/19/2015	70.60		-0.03%	-0.36%	0.88%	-1.10%	-0.44%	-0.53%	0.50%	0.948	0.344	
3/20/2015	71.46		1.22%	0.81%	-0.14%	0.54%	0.51%	0.77%	0.45%	0.853	0.395	
3/23/2015	71.89		0.60%	-0.19%	0.21%	0.24%	-0.08%	-0.03%	0.63%	1.193	0.235	
3/24/2015	71.34		-0.77%	-0.51%	0.58%	-0.29%	-0.77%	-0.60%	-0.17%	-0.322	0.748	
3/25/2015	70.55		-1.11%	-1.56%	-0.98%	1.03%	-1.07%	-1.04%	-0.06%	-0.121	0.904	
3/26/2015	70.20		-0.50%	-0.22%	0.11%	-0.06%	-0.52%	-0.32%	-0.18%	-0.333	0.740	

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Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
3/27/2015	70.05		-0.21%	0.32%	0.50%	-0.69%	0.28%	0.20%	-0.42%	-0.791	0.430	
3/30/2015	70.95		1.28%	1.24%	0.01%	-0.04%	1.57%	1.36%	-0.07%	-0.138	0.890	
3/31/2015	71.17		0.31%	-0.75%	0.42%	0.37%	-0.91%	-0.64%	0.95%	1.810	0.072	*
4/1/2015	71.29		0.17%	-0.38%	0.34%	0.42%	-0.47%	-0.25%	0.42%	0.802	0.423	
4/2/2015	71.45		0.22%	0.35%	-0.09%	0.31%	0.26%	0.39%	-0.16%	-0.307	0.760	
4/6/2015	72.12		0.94%	0.61%	-0.27%	-0.15%	0.35%	0.44%	0.50%	0.952	0.342	
4/7/2015	71.47		-0.90%	-0.22%	-0.19%	-0.16%	-0.44%	-0.33%	-0.58%	-1.092	0.276	
4/8/2015	71.58		0.15%	0.37%	0.53%	-0.72%	0.01%	0.09%	0.07%	0.124	0.901	
4/9/2015	71.90		0.45%	0.41%	-0.69%	-0.06%	0.10%	0.22%	0.23%	0.440	0.660	
4/10/2015	72.03		0.18%	0.49%	-0.07%	-0.28%	0.18%	0.29%	-0.11%	-0.200	0.842	
4/13/2015	71.98		-0.07%	-0.38%	0.50%	0.23%	0.12%	0.00%	-0.07%	-0.131	0.896	
4/14/2015	71.50		-0.67%	0.11%	-0.19%	0.19%	0.10%	0.17%	-0.83%	-1.582	0.115	
4/15/2015	71.94		0.62%	0.57%	0.25%	0.32%	0.21%	0.49%	0.13%	0.241	0.810	
4/16/2015	72.04		0.14%	-0.08%	-0.09%	-0.21%	0.32%	0.10%	0.04%	0.073	0.942	
4/17/2015	70.87		-1.62%	-1.23%	-0.46%	0.22%	-2.08%	-1.52%	-0.10%	-0.195	0.845	
4/20/2015	71.35		0.68%	0.95%	0.16%	-0.27%	0.81%	0.82%	-0.14%	-0.264	0.792	
4/21/2015	70.82		-0.74%	-0.10%	0.19%	-0.76%	-2.12%	-1.18%	0.44%	0.840	0.402	
4/22/2015	70.88		0.08%	0.46%	-0.37%	0.17%	-0.41%	0.07%	0.02%	0.035	0.972	
4/23/2015	70.81		-0.10%	0.29%	0.28%	-0.23%	0.77%	0.51%	-0.61%	-1.157	0.249	
4/24/2015	70.95		0.20%	0.17%	-0.51%	-0.29%	0.36%	0.19%	0.01%	0.017	0.986	
4/27/2015	70.31		-0.90%	-0.54%	-0.70%	0.56%	-0.71%	-0.48%	-0.42%	-0.802	0.423	
4/28/2015	70.69		0.54%	0.27%	0.21%	1.02%	0.51%	0.65%	-0.11%	-0.201	0.841	
4/29/2015	70.25		-0.62%	-0.38%	-0.74%	0.74%	-0.97%	-0.49%	-0.13%	-0.248	0.804	
4/30/2015	69.66		-0.84%	-1.11%	-1.05%	0.78%	-0.83%	-0.78%	-0.06%	-0.119	0.905	
5/1/2015	69.95		0.42%	1.01%	-0.30%	-0.62%	0.72%	0.70%	-0.28%	-0.530	0.597	
5/4/2015	69.82		-0.19%	0.32%	0.03%	0.24%	0.21%	0.34%	-0.52%	-0.996	0.321	
5/5/2015	70.00		0.26%	-1.19%	-0.15%	0.50%	-0.25%	-0.54%	0.80%	1.515	0.132	
5/6/2015	67.31		-3.84%	-0.31%	0.64%	-0.13%	-0.35%	-0.26%	-3.58%	-6.796	0.000	***
5/7/2015	67.72		0.61%	0.39%	0.06%	-0.39%	0.61%	0.43%	0.18%	0.339	0.735	
5/8/2015	67.27		-0.66%	1.21%	-0.56%	-0.12%	0.92%	0.98%	-1.64%	-3.116	0.002	***
5/11/2015	66.87		-0.59%	-0.39%	0.68%	-0.03%	-0.79%	-0.49%	-0.11%	-0.200	0.842	
5/12/2015	66.91		0.06%	-0.27%	0.00%	0.07%	-0.73%	-0.42%	0.48%	0.919	0.359	
5/13/2015	66.99		0.12%	0.01%	0.00%	0.02%	0.09%	0.09%	0.03%	0.060	0.952	
5/14/2015	67.64		0.97%	1.01%	-0.10%	-0.35%	1.05%	0.93%	0.04%	0.081	0.936	

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Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
5/15/2015	67.60		-0.06%	0.05%	-0.24%	-0.20%	-0.22%	-0.11%	0.05%	0.091	0.927	
5/18/2015	68.09		0.72%	0.44%	0.74%	-0.09%	0.44%	0.48%	0.25%	0.467	0.641	
5/19/2015	68.75		0.97%	-0.09%	-0.12%	0.23%	0.28%	0.17%	0.80%	1.516	0.131	
5/20/2015	68.73		-0.03%	-0.05%	0.22%	-0.14%	0.08%	0.03%	-0.06%	-0.121	0.904	
5/21/2015	68.10		-0.92%	0.23%	-0.29%	-0.02%	-0.38%	-0.06%	-0.86%	-1.625	0.106	
5/22/2015	67.60		-0.73%	-0.22%	-0.11%	-0.14%	-0.29%	-0.25%	-0.49%	-0.926	0.356	
5/26/2015	67.38		-0.33%	-1.01%	-0.02%	-0.01%	-1.06%	-0.95%	0.62%	1.179	0.240	
5/27/2015	67.61	0.30	0.79%	0.93%	0.33%	-0.34%	0.60%	0.70%	0.08%	0.155	0.877	
5/28/2015	67.80		0.28%	-0.12%	0.10%	0.13%	0.09%	0.06%	0.22%	0.427	0.670	
5/29/2015	67.32		-0.71%	-0.58%	0.03%	0.06%	-0.78%	-0.59%	-0.11%	-0.216	0.830	
6/1/2015	66.92		-0.59%	0.17%	-0.04%	-0.22%	-0.18%	-0.02%	-0.57%	-1.088	0.278	
6/2/2015	67.13		0.31%	-0.02%	0.33%	0.33%	-0.16%	0.05%	0.27%	0.510	0.611	
6/3/2015	67.72		0.88%	0.39%	0.87%	-0.24%	0.57%	0.49%	0.38%	0.730	0.466	
6/4/2015	67.05		-0.99%	-0.88%	-0.10%	-0.01%	-0.98%	-0.86%	-0.13%	-0.251	0.802	
6/5/2015	66.48		-0.85%	0.06%	0.80%	0.05%	-0.74%	-0.23%	-0.62%	-1.182	0.239	
6/8/2015	65.82		-0.99%	-0.66%	0.03%	0.03%	-0.99%	-0.74%	-0.25%	-0.482	0.631	
6/9/2015	65.71		-0.17%	0.02%	-0.30%	0.35%	0.11%	0.15%	-0.32%	-0.608	0.544	
6/10/2015	66.91		1.83%	1.20%	0.15%	0.19%	1.65%	1.44%	0.39%	0.733	0.464	
6/11/2015	67.49		0.87%	0.21%	-0.10%	-0.11%	1.00%	0.59%	0.28%	0.535	0.593	
6/12/2015	67.37		-0.18%	-0.63%	0.33%	0.13%	-0.54%	-0.47%	0.29%	0.546	0.586	
6/15/2015	66.67		-1.04%	-0.45%	0.11%	-0.13%	-0.44%	-0.41%	-0.63%	-1.200	0.232	
6/16/2015	67.33		0.99%	0.57%	0.10%	0.00%	0.80%	0.69%	0.30%	0.561	0.575	
6/17/2015	67.18		-0.22%	0.16%	-0.29%	-0.63%	0.32%	0.10%	-0.33%	-0.620	0.536	
6/18/2015	68.35		1.74%	0.99%	0.21%	-0.43%	1.45%	1.11%	0.63%	1.191	0.235	
6/19/2015	66.45		-2.78%	-0.43%	0.55%	-0.20%	-1.39%	-0.84%	-1.94%	-3.681	0.000	***
6/22/2015	66.28		-0.26%	0.63%	0.08%	-0.06%	0.42%	0.52%	-0.78%	-1.478	0.141	
6/23/2015	66.36		0.12%	0.12%	0.24%	0.27%	0.03%	0.18%	-0.06%	-0.118	0.906	
6/24/2015	65.95		-0.62%	-0.79%	-0.11%	0.13%	-1.05%	-0.82%	0.20%	0.381	0.704	
6/25/2015	65.03		-1.39%	-0.25%	0.37%	-0.20%	-1.25%	-0.70%	-0.69%	-1.316	0.190	
6/26/2015	65.83		1.23%	-0.06%	-0.23%	0.45%	0.69%	0.42%	0.81%	1.535	0.127	
6/29/2015	64.68		-1.75%	-2.15%	-0.43%	0.18%	-1.83%	-1.84%	0.09%	0.170	0.865	
6/30/2015	64.87		0.29%	0.33%	0.30%	-0.67%	0.35%	0.23%	0.06%	0.121	0.903	
7/1/2015	65.49		0.96%	0.60%	-0.77%	-0.06%	6.40%	3.33%	-2.37%	-4.501	0.000	***
7/2/2015	64.99		-0.76%	-0.11%	-0.56%	-0.04%	0.40%	0.13%	-0.89%	-1.697	0.091	*

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Date	Actual Price	Div Amt	Regression Input					Regression Results				
			Actual Return	Mkt-R _F	SMB	HML	Industry	Predicted Return	Abnormal Return	t-stat	p-value	Sig ^[1]
7/6/2015	64.81		-0.28%	-0.37%	0.15%	-0.55%	-0.15%	-0.32%	0.04%	0.079	0.937	
7/7/2015	65.74		1.43%	0.53%	-0.44%	-0.25%	0.98%	0.67%	0.77%	1.458	0.147	
7/8/2015	64.92		-1.25%	-1.68%	-0.03%	0.07%	-1.24%	-1.33%	0.08%	0.154	0.877	
7/9/2015	65.41		0.75%	0.28%	0.16%	-0.03%	0.87%	0.59%	0.17%	0.321	0.749	
7/10/2015	66.19		1.19%	1.24%	0.23%	-0.55%	0.74%	0.87%	0.33%	0.622	0.535	
7/13/2015	67.25		1.60%	1.14%	-0.07%	-0.42%	0.71%	0.81%	0.79%	1.501	0.135	
7/14/2015	67.59		0.51%	0.47%	0.15%	0.13%	-0.03%	0.28%	0.23%	0.431	0.667	
7/15/2015	68.06		0.70%	-0.19%	-0.81%	-0.08%	0.06%	-0.10%	0.79%	1.505	0.134	
7/16/2015	67.98		-0.12%	0.78%	-0.17%	-0.62%	0.47%	0.47%	-0.59%	-1.125	0.262	
7/17/2015	67.59		-0.57%	0.05%	-0.60%	-0.65%	0.28%	0.01%	-0.59%	-1.113	0.267	
7/20/2015	67.71		0.18%	-0.01%	-0.72%	-0.57%	-0.33%	-0.30%	0.48%	0.906	0.366	
7/21/2015	67.70		-0.01%	-0.47%	0.03%	0.30%	0.18%	-0.03%	0.02%	0.029	0.977	
7/22/2015	68.37		0.99%	-0.18%	0.18%	0.19%	1.17%	0.57%	0.42%	0.798	0.426	
7/23/2015	68.36		-0.01%	-0.60%	-0.35%	-0.34%	-0.18%	-0.43%	0.41%	0.786	0.433	
7/24/2015	68.32		-0.06%	-1.08%	-0.61%	-0.02%	-0.02%	-0.52%	0.46%	0.883	0.379	
7/27/2015	68.40		0.12%	-0.74%	-0.25%	0.08%	0.25%	-0.19%	0.30%	0.579	0.563	
7/28/2015	68.58		0.26%	1.23%	-0.34%	-0.11%	0.32%	0.71%	-0.45%	-0.856	0.393	
7/29/2015	69.04		0.67%	0.74%	-0.36%	0.52%	0.44%	0.68%	-0.01%	-0.020	0.984	
7/30/2015	69.16		0.17%	0.12%	0.17%	-0.26%	0.49%	0.28%	-0.11%	-0.206	0.837	
7/31/2015	68.95		-0.30%	-0.15%	0.82%	-0.99%	-0.20%	-0.29%	-0.01%	-0.018	0.986	
8/3/2015	69.38		0.62%	-0.35%	-0.33%	-0.17%	1.01%	0.30%	0.33%	0.620	0.536	

Notes:

^[1] ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

In re: The Allstate Corporation Securities Litigation

Analysis of Significance Levels Reported in the Three Top-Tier Finance Journals from 2005 to 2010

Panel A. Journal of Finance

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	2	1	1	1	1	3	9
	Percentage ^[1]	4.4%	2.2%	2.3%	4.0%	1.9%	7.0%	3.5%
5% level or better	Count	14	11	14	7	16	8	70
	Percentage ^[1]	31.1%	24.4%	32.6%	28.0%	29.6%	18.6%	27.5%
10% level or better	Count	29	33	28	17	37	32	176
	Percentage ^[1]	64.4%	73.3%	65.1%	68.0%	68.5%	74.4%	69.0%
Total Articles Reporting Significance		45	45	43	25	54	43	255
Non-Empirical or Not Reported		40	42	40	28	23	24	197
Total Articles Reviewed		85	87	83	53	77	67	452

Panel B. Journal of Financial Economics

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	3	4	2	1	3	0	13
	Percentage ^[1]	5.7%	8.0%	2.7%	1.8%	4.8%	0.0%	3.6%
5% level or better	Count	16	5	21	13	13	17	85
	Percentage ^[1]	30.2%	10.0%	28.8%	23.2%	21.0%	24.6%	23.4%
10% level or better	Count	34	41	50	42	46	52	265
	Percentage ^[1]	64.2%	82.0%	68.5%	75.0%	74.2%	75.4%	73.0%
Total Articles Reporting Significance		53	50	73	56	62	69	363
Non-Empirical or Not Reported		24	38	27	19	31	24	163
Total Articles Reviewed		77	88	100	75	93	93	526

Panel C. Review of Financial Studies

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	1	2	2	1	4	1	11
	Percentage ^[1]	7.1%	8.3%	6.5%	2.9%	5.1%	1.4%	4.4%
5% level or better	Count	4	9	9	11	16	17	66
	Percentage ^[1]	28.6%	37.5%	29.0%	31.4%	20.3%	24.6%	26.2%
10% level or better	Count	9	13	20	23	59	51	175
	Percentage ^[1]	64.3%	54.2%	64.5%	65.7%	74.7%	73.9%	69.4%
Total Articles Reporting Significance		14	24	31	35	79	69	252
Non-Empirical or Not Reported		27	17	28	18	41	41	172
Total Articles Reviewed		41	41	59	53	120	110	424

Panel D. All Three Major Journals

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	6	7	5	3	8	4	33
	Percentage ^[1]	5.4%	5.9%	3.4%	2.6%	4.1%	2.2%	3.8%
5% level or better	Count	34	25	44	31	45	42	221
	Percentage ^[1]	30.4%	21.0%	29.9%	26.7%	23.1%	23.2%	25.4%
10% level or better	Count	72	87	98	82	142	135	616
	Percentage ^[1]	64.3%	73.1%	66.7%	70.7%	72.8%	74.6%	70.8%
Total Articles Reporting Significance		112	119	147	116	195	181	870
Non-Empirical or Not Reported		91	97	95	65	95	89	532
Total Articles Reviewed		203	216	242	181	290	270	1,402

Note:

^[1] Count divided by the total articles reporting significance.

Sources: Journal of Finance, Journal of Financial Economics, and Review of Financial Studies.

Exhibit 12

In re: The Allstate Corporation Securities Litigation
Market Value of the Public Float in Allstate's Common Stock during the Class Period

Date	Shares Held by Insiders ^[1]	Shares Outstanding ^[2]	Stock Price ^[3]	Market Capitalization	Public Float (Shares)	Market Value of Public Float	Public Float (%) ^[4]
9/30/2014	986,811	433,400,209	\$ 61.37	\$ 26,597,770,826	432,413,398	\$ 26,537,210,235	99.77%
12/31/2014	924,460	419,433,284	70.25	29,465,188,201	418,508,824	29,400,244,886	99.78%
3/31/2015	1,254,434	416,426,585	71.17	29,637,080,054	415,172,151	29,547,801,987	99.70%
6/30/2015	1,230,149	409,012,961	64.87	26,532,670,780	407,782,812	26,452,871,014	99.70%
9/30/2015	1,237,008	400,389,900	58.24	23,318,707,776	399,152,892	23,246,664,430	99.69%
Average	1,126,572	415,732,588	\$ 65.18	\$ 27,110,283,528	414,606,015	\$ 27,036,958,510	99.73%

Notes:

^[1] Shares held by insiders and strategic owners that are not already reported as institutional holders from Capital IQ.

^[2] Shares outstanding from The Allstate Corporation's 10-Q and 10-K reports filed with the SEC.

^[3] Stock price from Bloomberg L.P.

^[4] Percentage public float is calculated as the number of shares in the public float divided by the number of shares outstanding.

Sources: Bloomberg L.P., Capital IQ, and The Allstate Corporation's Forms 10-K and 10-Q.

Exhibit 13

In re: The Allstate Corporation Securities Litigation
Bid-Ask Spread ^[1] of The Allstate Corporation's Common Stock during the
Class Period ^[2]

Month / Year	Days in Month	Mean	Median	Min	Max
October 2014 ^[3]	3	0.02%	0.02%	0.02%	0.03%
November 2014	19	0.02%	0.01%	0.01%	0.03%
December 2014	22	0.02%	0.01%	0.01%	0.03%
January 2015	20	0.01%	0.01%	0.01%	0.03%
February 2015	19	0.01%	0.01%	0.01%	0.03%
March 2015	22	0.01%	0.01%	0.01%	0.01%
April 2015	21	0.01%	0.01%	0.01%	0.01%
May 2015	20	0.02%	0.01%	0.01%	0.04%
June 2015	22	0.02%	0.02%	0.01%	0.03%
July 2015	22	0.02%	0.01%	0.01%	0.03%
August 2015 ^[4]	1	0.03%	0.03%	0.03%	0.03%
Class Period	191	0.02%	0.01%	0.01%	0.04%

Notes:

^[1] Excludes observations where the bid price is greater than the ask price.

^[2] Class Period is from October 29, 2014 to August 3, 2015.

^[3] October 29, 2014 to October 31, 2014.

^[4] August 1, 2015 to August 3, 2015.

Source: CRSP (Center for Research in Security Prices).

Exhibit 14

In re: The Allstate Corporation Securities Litigation
Short Interest during the Class Period
October 29, 2014 - August 3, 2015

Date	Allstate Short Interest			NYSE Short Interest
	Short Interest ^[1]	Shares Outstanding ^[2]	Short Interest as a Percentage of Shares Outstanding	Short Interest as a Percentage of Shares Outstanding ^[3]
10/31/2014	8,910,180	419,433,284	2.124%	3.304%
11/14/2014	7,612,897	419,433,284	1.815%	3.304%
11/28/2014	8,078,085	419,433,284	1.926%	3.304%
12/15/2014	6,564,266	419,433,284	1.565%	3.225%
12/31/2014	4,563,760	419,433,284	1.088%	3.203%
1/15/2015	4,435,050	419,433,284	1.057%	3.203%
1/30/2015	5,060,979	416,426,585	1.215%	3.203%
2/13/2015	5,218,777	416,426,585	1.253%	3.204%
2/27/2015	4,456,708	416,426,585	1.070%	3.204%
3/13/2015	4,801,407	416,426,585	1.153%	3.301%
3/31/2015	9,335,812	416,426,585	2.242%	3.422%
4/15/2015	8,359,769	416,426,585	2.008%	3.422%
4/30/2015	5,702,221	409,012,961	1.394%	3.400%
5/15/2015	4,354,315	409,012,961	1.065%	3.400%
5/29/2015	5,154,047	409,012,961	1.260%	3.400%
6/15/2015	5,494,822	409,012,961	1.343%	3.408%
6/30/2015	4,903,553	409,012,961	1.199%	3.644%
7/15/2015	4,803,112	409,012,961	1.174%	3.644%
7/31/2015	4,890,433	400,389,900	1.221%	3.618%
8/14/2015	5,424,415	400,389,900	1.355%	3.618%
Average			1.426%	3.372%

Notes:

^[1] Short interest as reported by Bloomberg L.P.

^[2] Shares outstanding reported in Allstate's 10-Q and 10-K filings with the SEC.

^[3] NYSE Exchange US Short Interest (NYSINYS2 Index) as a % of Total Shares Outstanding (NYXdata.com).

Sources: Bloomberg L.P. and www.NYXdata.com.

In re: The Allstate Corporation Securities Litigation
Tests for Put-Call Parity Violations between October 29, 2014 and August 3, 2015
"Failure is an Option" Method ^{[1] [2]}

Month / Year	Average Put-Call Parity Violation ^[3]	Average Absolute Put-Call Parity Violation ^[3]	Average Put-Call Parity Violation (Near the Money) ^{[3] [4]}	Average Absolute Put-Call Parity Violation (Near the Money) ^{[3] [4]}
October 2014 ^[5]	-0.064%	0.128%	-0.030%	0.104%
November 2014	-0.041%	0.157%	-0.006%	0.134%
December 2014	-0.135%	0.247%	-0.105%	0.216%
January 2015	-0.193%	0.262%	-0.154%	0.225%
February 2015	-0.110%	0.183%	-0.071%	0.145%
March 2015	-0.138%	0.215%	-0.110%	0.179%
April 2015	-0.188%	0.211%	-0.152%	0.179%
May 2015	-0.204%	0.235%	-0.165%	0.194%
June 2015	-0.273%	0.290%	-0.233%	0.249%
July 2015	-0.128%	0.207%	-0.103%	0.174%
August 2015 ^[6]	0.074%	0.115%	0.067%	0.114%
Class Period	-0.153%	0.219%	-0.120%	0.186%
Number of Observations	2,521	2,521	2,031	2,031
Number of Contracts ^[7]	157,336	157,336	156,665	156,665

Notes:

^[1] Put-Call Parity Violation = {Stock Price - [Present Value of the Strike Price + Present Value of the Dividend + Call Price - Put Price]} / Stock Price.

^[2] Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," 22 (5) *Review of Financial Studies*, 2009, pages 1955-1980.

^[3] Calls and Puts are matched based on strike price and expiration date. Options with less than 6 calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than \$0.375 are deleted. Any call option with market price higher than the underlying stock price ($C > S_0$) and any call option with market price less than the stock price minus the present value of the strike price and also the present value of the expected dividends in the remaining life of the option ($C < S_0 - PV(X) - PV(\text{Dividends})$) are deleted. Any put option with market price less than the option's intrinsic value ($P < X - S_0$) and any put option with market price above the strike price ($P > X$) are also deleted. Call Price and Put Price are equal to the average of the best bid and best ask quotes.

^[4] Sample is restricted to those pairs for which $-0.1 < \ln(\text{Stock Price}/\text{Strike Price}) < 0.1$.

^[5] Data from October 29, 2014 to October 31, 2014.

^[6] Data from August 1, 2015 to August 3, 2015.

^[7] Total number of put and call contracts. Market makers change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of contracts traded each day. Bid and ask quotes come from the NBBO data (National Best Bid and Offer).

Sources: Bloomberg L.P. and OptionMetrics.

In re: The Allstate Corporation Securities Litigation
Tests for Put-Call Parity Violations between October 29, 2014 and August 3, 2015
"Limited Arbitrage and Short Sales Restrictions" Approach ^{[1] [2]}

Month / Year	Average Put-Call Parity Violation ("R") ^[3]	Average Absolute Put-Call Parity Violation ("R") ^[3]	Average Put-Call Parity Violation ("R") (Near the Money) ^{[3] [4]}	Average Absolute Put-Call Parity Violation ("R") (Near the Money) ^{[3] [4]}
October 2014 ^[5]	-0.0641	0.1283	-0.0295	0.1043
November 2014	-0.0408	0.1570	-0.0059	0.1338
December 2014	-0.1343	0.2463	-0.1042	0.2157
January 2015	-0.1923	0.2615	-0.1533	0.2249
February 2015	-0.1101	0.1830	-0.0709	0.1450
March 2015	-0.1375	0.2147	-0.1100	0.1792
April 2015	-0.1879	0.2103	-0.1522	0.1788
May 2015	-0.2035	0.2343	-0.1643	0.1938
June 2015	-0.2726	0.2889	-0.2323	0.2485
July 2015	-0.1274	0.2064	-0.1024	0.1736
August 2015 ^[6]	0.0737	0.1149	0.0671	0.1140
Class Period	-0.1525	0.2189	-0.1192	0.1853
Number of Observations	2,521	2,521	2,031	2,031
Number of Contracts ^[7]	157,336	157,336	156,665	156,665

Notes:

^[1] Put-Call Parity Violation ("R") = $100 * \ln \{ \text{Stock Price} / [\text{Present Value of the Strike Price} + \text{Present Value of the Dividend} + \text{Call Price} - \text{Put Price}] \}$.

^[2] Eli Ofek, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets, 74 *Journal of Financial Economics*, 2004, pages 305-342.

^[3] Calls and Puts are matched based on strike price and expiration date. Options with less than 6 calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than \$0.375 are deleted. Any call option with market price higher than the underlying stock price ($C > S_0$) and any call option with market price less than the stock price minus the present value of the strike price and also the present value of the expected dividends in the remaining life of the option ($C < S_0 - PV(X) - PV(\text{Dividends})$) are deleted. Any put option with market price less than the option's intrinsic value ($P < X - S_0$) and any put option with market price above the strike price ($P > X$) are also deleted. Call Price and Put Price are equal to the average of the best bid and best ask quotes.

^[4] Sample is restricted to those pairs for which $-0.1 < \ln(\text{Stock Price}/\text{Strike Price}) < 0.1$.

^[5] Data from October 29, 2014 to October 31, 2014.

^[6] Data from August 1, 2015 to August 3, 2015.

^[7] Total number of put and call contracts. Market makers change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of contracts traded each day. Bid and ask quotes come from the NBBO data (National Best Bid and Offer).

Sources: Bloomberg L.P. and OptionMetrics.

Exhibit 17**In re: The Allstate Corporation Securities Litigation
Non-Parametric Tests for Random Walk****Panel A. McNemar Test**

Class Period	+,+ (a) ^[1]	+, - (b) ^[2]	-,+ (c) ^[3]	-, - (d) ^[4]	X² ^[5]	p-value ^[6]
10/29/2014 - 8/3/2015	44	55	55	37	0.0091	0.9240

Panel B. Wilcoxon Signed-Rank Test ^[7]

Class Period	t-statistic ^[8]	p-value ^[9]
10/29/2014 - 8/3/2015	0.1758	0.8604

Notes:

^[1] Total number of observations in which a *positive* stock return is followed by a *positive* stock return the following day.

^[2] Total number of observations in which a *positive* stock return is followed by a *negative* stock return the following day.

^[3] Total number of observations in which a *negative* stock return is followed by a *positive* stock return the following day.

^[4] Total number of observations in which a *negative* stock return is followed by a *negative* stock return the following day.

^[5] X² is a chi-square statistic with 1 degree of freedom. The formula is rewritten to correct for discontinuity:

$$McNemar \text{ Statistic } (X^2) = \frac{(|b - c| - 1)^2}{b + c}$$

^[6] Based on a two-tailed test.

^[7] Wilcoxon signed-rank test on differences between consecutive stock returns during the Class Period.

^[8] The Wilcoxon t-statistic correcting for both continuity and ties.

^[9] The p-value for the asymptotic normal approximation to the Wilcoxon t-statistic.

Source: Bloomberg L.P.

Exhibit 18
In re: The Allstate Corporation Securities Litigation
Parametric Tests for Serial Correlation

Panel A. Serial Correlation ^[1]

<u>Class Period</u>	<u>Number of Days</u>	<u>Using Raw Returns</u>			
		<u>R-Square</u>	<u>Beta</u>	<u>t-statistic</u>	<u>p-value</u>
10/29/2014 - 8/3/2015	190	0.0050	-0.1014	-1.4278	0.1550

<u>Class Period</u>	<u>Number of Days</u>	<u>Using Excess Returns</u> ^[2]			
		<u>R-Square</u>	<u>Beta</u>	<u>t-statistic</u>	<u>p-value</u>
10/29/2014 - 8/3/2015	190	-0.0050	-0.0191	-0.2235	0.8234

Panel B. Portmanteau Q-Tests ^[3]

<u>Class Period</u>	<u>Number of Days</u>	<u>Using Raw Returns</u>		
		<u># of Lags</u>	<u>Q-statistic</u>	<u>p-value</u>
10/29/2014 - 8/3/2015	190	1	1.9874	0.1586
		2	2.0128	0.3655
		3	2.2004	0.5319
		4	4.9270	0.2949
		5	5.1452	0.3984

<u>Class Period</u>	<u>Number of Days</u>	<u>Using Excess Returns</u> ^[2]		
		<u># of Lags</u>	<u>Q-statistic</u>	<u>p-value</u>
10/29/2014 - 8/3/2015	190	1	0.0709	0.7901
		2	1.0811	0.5824
		3	3.9925	0.2623
		4	4.2648	0.3713
		5	4.7137	0.4518

Notes:

^[1] Allstate's returns regressed against Allstate's prior day returns with white heteroskedasticity adjustments for heteroskedasticity-adjusted standard errors.

^[2] Excess or abnormal returns from Modified Fama-French Three-Factor Model.

^[3] The autocorrelations of Allstate's returns based on a 1 day, 2 day, 3 day, 4 day, and 5 day lag.

Source: Bloomberg L.P.